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A review of the genus *Hoplistomerus* Macquart, 1838 (Diptera: Asilidae: Laphriinae)

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ABSTRACT

The genus *Hoplistomerus* Macquart, 1838, which is confined to the Afrotropical Region, is reviewed. The taxonomic position of the subfamilies Laphriinae and Laphystiinae is briefly discussed. Lectotypes are designated for *H. caliginosis*, *H. nobilis*, and *H. serripes*, two new species are described (*H. oldroydi* from Kenya and *H. pegos* from Somalia) and a key is provided for the identification of all eleven recognised species. The distributions of all species are discussed, but especially those of *H. nobilis* (a mainly southern African species) and *H. serripes* (distributed widely between West and East Africa) for which good data sets are available. Biological information suggests that species of *Hoplistomerus* are primarily grassland and savannah flies. Prey records demonstrate that adults feed almost exclusively on small dung beetles (Scarabaeidae).

KEY WORDS: Afrotropical, Asilidae, biology, distribution, *Hoplistomerus*, identification key, robber flies, taxonomy, dung beetles, predation.

INTRODUCTION

Hoplistomerus Macquart, 1838 is a well-known and easily recognised genus of robber flies (Figs 1–4) that is restricted to the Afrotropical zoogeographic region (Fig. 40). While the excellent revisionary work of Oldroyd (1940) made identification of the then known species possible, the accumulation of many unrecorded specimens makes it possible to clarify the taxonomy and to report more fully on the distributions of these interesting dung beetle predators.

The taxonomic history of *Hoplistomerus* can be briefly and chronologically summarised as follows:

Fabricius (1805) – Described *Laphria serripes* from Guinea.
Macquart (1834) – Described *Laphria maculipennis* from Senegal.
Macquart (1838) – Described the genus *Hoplistomerus* with *Laphria serripes* as the only valid species (*maculipennis* being listed as a synonym).
Macquart (1839) – Republished his 1838 work in reprint form with different pagination.
Loew (1858) – Provided a redescription of *Hoplistomera serripes* and descriptions of three new species (*auriventris* from Sudan, and *nobilis* and *cribrata*, both from South Africa).
Loew (1860) – Elaborated on his 1858 publication, providing fuller descriptions of the same four species (*serripes*, *auriventris*, *nobilis* and *cribrata*).
Wulp (1899) – Provided descriptions of two new species of *Hoplistomera* from Yemen (*caliginosa* and *leucocoma*).
Ricardo (1903) – Described *Hoplistomera nigrescens* from Socotra.
Hermann (1908) – Transferred *cribrata* to *Trichardis*.
Speiser (1910) – Described *Hoplistomera zelimina* from Tanzania.
Bezzi (1915) – Described *Hoplistomerus erythropus* from Somalia.

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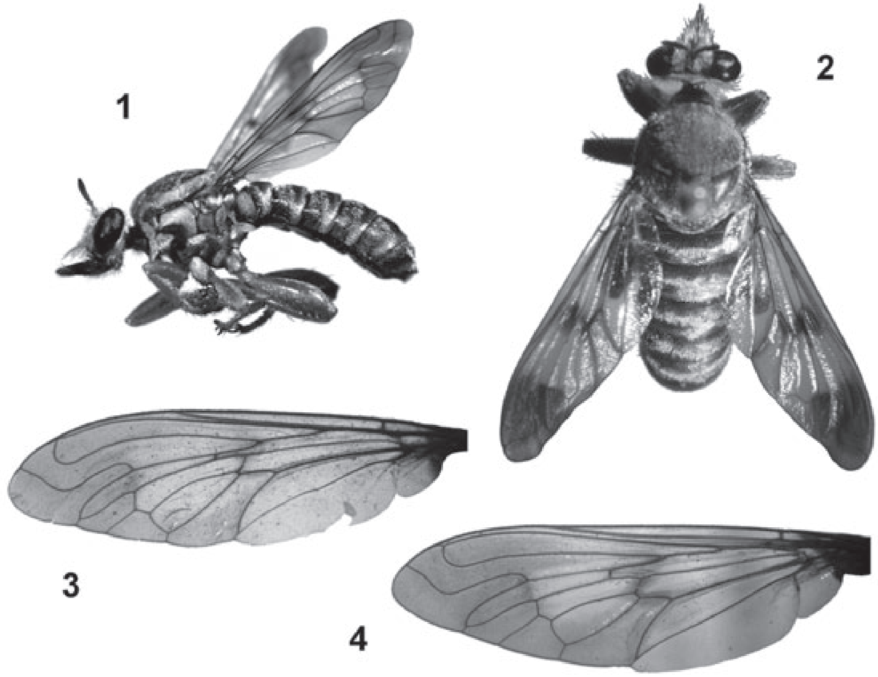

Figs 1–4. *Hoplistomerus* species: (1) *H. erythropus* Bezzi, 1915, entire female, lateral view; (2) *H. nobilis* Loew, 1858, entire female, dorsal view; (3) *H. oldroydi* sp. n., wing; (4) *H. pelos* sp. n., wing.

Hermann (1920) – Discussed *Hoplistomerus* listing the type species (*serripes*) and four others (*nobilis*, *auriventris*, *zeliminus* and *caliginosus*).

Engel (1932) – Reported *Hoplistomerus caliginosus* from the northern frontier of Kenya.

Oldroyd (1940) – Revised *Hoplistomerus*, describing three new species (*engeli* from Somalia and Kenya, and *miniatus* and *quintillus*, both from Kenya). A key to the eight recognised species (*caliginosus*, *engeli*, *erythropus*, *miniatus*, *nobilis*, *quintillus*, *serripes* and *zelimina*) was provided, *auriventris* being considered a form of *serripes* and *Laphria maculipennis* being listed as a synonym of *serripes*. He transferred *leucocomus* and *nigrescens* to *Trichardis*.

Hull (1962) – Redescribed *Hoplistomerus* as part of a world revision of genera, listing eight Ethiopian (=Afrotropical) species (*caliginosa*, *engeli*, *erythropus*, *miniatus*, *nobilis*, *quintillus*, *serripes* and *zelimina*) and placing *auriventris* as a subspecies of *serripes*.

Oldroyd (1970) – In handling the Asilidae of the Congo Basin the author provided a brief history of *Hoplistomerus* and the description of *garambensis* from the Garamba National Park, DR Congo.

Oldroyd (1974) – In his account of the southern Africa Asilidae, he provided a brief history of the genus, listing the only species (*nobilis*) found in the subregion.

Oldroyd (1980) – Catalogued (under the tribe Laphriini of the subfamily Laphriinae) the then recognised species—*caliginosus*, *engeli*, *erythropus*, *garambensis*, *miniatus*, *nobilis*, *quintillus*, *serripes* and *zelimina*—giving *auriventris* and *serripes* as names of recognised subspecies and *maculipennis* as a synonym of *serripes*.

At the commencement of this study there were nine species of *Hoplistomerus* considered valid (i.e. those catalogued by Oldroyd (1980)). This study reviews the taxonomy of the genus, adding two new species and clarifying some of the confusion surrounding others. A key is provided for the separation of all eleven species and notes are provided on distribution and biology when sufficient data are available.

MATERIAL AND METHODS

Every effort was made to gather as many specimens as possible in order to elucidate the distributions of species as fully as possible. While long lists of specimens are sometimes viewed as unnecessary and wasteful of space, I believe they not only add to the credibility of taxonomic studies, but are able to provide researchers, especially ecologists, with an important source of data for a variety of non-taxonomic projects (Dikow *et al.* in press). All material studied has been listed in a standardised format that is both brief and useful. Information not found on labels is provided in square brackets. Co-ordinates for known localities were found by using gazetteers and by consulting the Geonames website (http://gnswww.nga.mil/geonames/GNS/index.jsp). When labels do not specify otherwise, and a choice of places with the same name was presented, the Populated Place was usually selected. Where names identical in spelling could not be found, closely spelt names that might be pronounced in a similar manner were sometimes accepted (especially in the case of old and poorly handwritten labels). When considerable doubt about the accuracy of possible coordinates existed it was decided to declare the locality as unknown.

As the external features of previously described species are in most instances already adequately described it was decided not to provide lengthy redescriptions, but instead to provide diagnoses using characters considered useful in defining species. Full descriptions are, however, given for newly described species (terminology generally following McAlpine (1981)) and male terminalia are illustrated for all species, as these have not previously been described from macerated preparations. Male terminalia vary only slightly interspecifically, important differences being largely confined to the shape of gonocoxites and gonostyli. Although terminalia are invariably rotated through about 180°, illustrations of lateral views have not been rotated and so the epandrium, usually situated dorsally, is seen as ventrally situated.

Specimens studied are housed in the Natal Museum (NMSA), unless otherwise indicated. Acronyms of depositories follow Arnett and Samuelson (1986) and are used when listing specimens. Curators who kindly assisted me are indicated in brackets.

AMGS – Albany Museum, Grahamstown, South Africa (A. Kirk-Spriggs).
BMNH – The Natural History Museum, London, UK (E. McAlister).
CASC – California Academy of Sciences, San Francisco, USA (A. Carmichael).
DMSA – Durban Museum, Durban, South Africa (K. Williams).
MCMI – Museo Civico di Storia Naturale, Milano [Milan], Italy (F. Rigato).
MNHN – Muséum National d'Histoire Naturelle, Paris, France (C. Daugeron).
MRAC – Musee Royal de l'Afrique Centrale, Tervuren, Belgium (E. De Coninck).
MZLU – Zoological Museum, Dept. Zoology, Lund, Sweden (R. Danielsson).
MZUF – Museo Zoologica de 'La Specola', Firenze [Florence], Italy (L. Bartolozzi).
NHMW – Naturhistorisches Museum Wien, Wien, Austria (P. Sehnal).
NHRS – Naturhistoriska Riksmuseet, Stockholm, Sweden (B. Viklund).

NMNH – National Museum of Natural History, Smithsonian Institution, Washington, USA (F. Christian Thompson).
NMSA – Natal Museum, Pietermaritzburg, South Africa (M. Mostovski).
OXUM – Hope Entomological Collections, Univ. Museum, Oxford, UK (D. Mann).
SAMC – South African Museum, Cape Town, South Africa (M. Cochrane).
SANC – National Collection of Insects, Pretoria, South Africa.
SMNS – Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany (H.-P. Tschorsnig).
UZMD – Zoologisk Museum, Copenhagen, Denmark (J. Pedersen).
ZMHB – Zoologisches Museum, Berlin, Germany (J. Ziegler).
ZSMC – Zoologische Staatssammlung, München, Germany (B. Stock).

In addition, Dr Torsten Dikow kindly identified material in the American Museum of Natural History (AMNH) in New York, USA, which is listed separately, as I have not personally studied this material.

TAXONOMY

Genus *Hoplistomerus* Macquart, 1838

Hoplistomerus: Macquart 1838*b*: 59 [1839*a*: 175]. Type species: *Laphria serripes* Fabricius, 1805, by monotypy.

Hoplistomera. Variant spelling of *Hoplistomerus*.

While *Hoplistomerus* is a fairly distinctive genus, its classification within currently accepted subfamilies is open to debate. Oldroyd (1963, 1974) placed *Hoplistomerus* in the tribe Laphriini (then including about 25 genera of *Laphria*-like flies). Papavero's (1973) preliminary phylogenetic study did much to elucidate the situation. He essentially divided the Laphriini into two subfamilies, the Laphriinae, into which the majority of Oldroyd's afrotropical genera of Laphriini were placed, and the Laphystiinae, containing only three afrotropical genera (*Hoplistomerus*, *Perasis* Hermann, 1920 and *Trichardis* Hermann, 1906). While in my earlier work (Londt 1988) I followed Oldroyd's arrangement, I subsequently (Londt 2004) decided to adopt Papavero's ideas and treated *Hoplistomerus* (and its two close relatives) as Laphystiinae. The recent work of Bybee *et al*. (2004) suggests that my shift in thinking may have been premature, as molecular evidence appears to show that the Laphystiinae are too closely related to the Laphriinae for these taxa to be considered separate. In addition, as yet unpublished data accumulated by Dikow (2007) essentially support the results of Bybee *et al*. (2004). It appears, therefore, that *Hoplistomerus*, along with *Perasis* and *Trichardis*, should once again be treated as Laphriinae (Londt 2007). With the molecular tools now so commonly used to construct reliable phylogenies and classifications being more readily available, it is surely a matter of time before we will be able to adopt a reliable universal classification for the Asilidae. In the meantime I believe that *Hoplistomerus* is probably best accommodated in the Laphriinae.

Diagnosis: Laphriine asilids with the following combination of characters. *Head*: Antennal postpedicel elongate; antennal style apparently absent; proboscis large and protruding well beyond lower epistomal margin. *Thorax*: Anatergal macrosetae absent; scutellum lacking marginal macrosetae; postmetacoxal area membranous; hind femur always with well-developed tubercles, the larger ones often coalescing with each other; hind leg of male with a small tibial spur; vein R2+3 bent anteriorly at tip and joining R1 just before or at C; cell r_5 always closed. *Abdomen*: Often with golden setation.

Hoplistomerus caliginosus Wulp, 1899

Figs 5–7

Hoplistomera caliginosa: Wulp 1899: 90.
Hoplistomerus caliginosa: Hull 1962: 96.
Hoplistomerus caliginosus: Oldroyd 1940: 314–315 (fig. 5c ♂ clasper); 1980: 350 (catalogue).

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.7:? (i.e. scape somewhat longer than pedicel; postpedicel missing). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur small. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia covering posterodistal half. Prothoracic coxa and prosternum both dark red-brown. *Abdomen*: T3 setulae entirely white (no golden setae evident). ♂ genitalia as in Figs 5–7.

Type specimens studied: YEMEN: 1♂ **lectotype**, 'Type. / v.d. Wulp, / Trans. Ent. Soc., / 1899, page 90, / pl. iii, fig. 2.' [white with red border], 'S.W. Arabia, / 15 miles N.W. of / Aden [12°50'N:45°00'E], Lahej [Lahij, 13°03'N:44°53'E] / Capt. Mar. 28.95 / & pres. 1899 by / J. W. Yerbury.', '1899 / 7712', '*Hoplistomera / caliginosa* n.s.', 'Type Dip: 213 2/2 / *Hoplistomera / caliginosa* / v.d. Wulp / Hope Dept. Oxford' (OXUM); 1♂ **paralectotype**, 'Type. / v.d. Wulp, / Trans. Ent. Soc., / 1899, page 90, / pl. iii, fig. 2.' [white with red border], 'S.W. Arabia, / 19m. fr. Aden. / Haithalhim. [?] / Capt. Mar. 26.95 / & pres. 1899 by / J. W. Yerbury.', '1899 / 7711', 'Type Dip: 213 1/2 / *Hoplistomera / caliginosa* / v.d. Wulp / Hope Dept. Oxford' (OXUM).

Notes: Wulp (1899) stated that his specimens were female, but Oldroyd (1940) reported that they were in fact males, a fact I can confirm. A holotype has never been designated and so Wulp's specimens are considered syntypes. I here designate the ♂ from 'Lahej' as lectotype, the other specimen being a paralectotype. Lahej [? Lahij] is therefore the type locality. While Oldroyd (1940) reports the presence of another male from Lahej in the BMNH, no other material is known.

Distribution and biology: Known only from Yemen. Both types were collected at the end of March (Table 1) more than a century ago.

Hoplistomerus engeli Oldroyd, 1940

Figs 8–10

Hoplistomerus caliginosus: Engel (*nec* Wulp) 1932: 257. Misidentification.
Hoplistomerus engeli: Oldroyd 1940: 316 (fig. 5f ♂ clasper); 1980: 350 (catalogue); Hull 1962: 96.

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.9:2.5 (i.e. scape and pedicel approximately equal; postpedicel less than three times length of scape). *Thorax*: Presutural macroseta(e) present. Anepisternal macroseta present. Prosternal ventromedial setation short to absent. Male metatibial spur small. Scutellum lacking a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a narrow posterior strip and small distoposterior area. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur dark red-brown (tips may be paler). *Abdomen*: T3 setulae entirely white (no golden setae evident). ♂ genitalia as in Figs 8–10.

Type specimens studied (all BMNH): SOMALIA: 1♂ **holotype**, 'Holo- / type', 'Bohotle [08°15'N:46°20'E] / Somaliland. /1903. / Vety-Major A. F. Appleton. / 1907–89', 'Holotype / *Hoplistomerus* ♂ / *engeli* Oldr. / det. H. Oldroyd 1940'; 1♂ 1♀ **paratypes**, same date but labeled as paratypes. KENYA [? SOMALIA]: 1♀ **paratype**, 'Neboi, / 6.vi.22, 'Kenya Colony / Northern Frontier Distr. / Juba R. [00°15'S:42°38'E] / Dr. J. O. Bevan'.

Note: I do not know where Neboi is and can not trace a river in Kenya by the name of Juba. However, a 'stream' by that name exists in the SW of Somalia near the Kenyan border which seems the most likely locality.

Other specimens studied: SOMALIA: 1♀ Diinsoor [Dhiin Soor, 02°24'N:42°59'E], 26.xi.1983, Lavigne; 2♂ Baidoa [03°04'N:43°48'E], 11.xi.1983, Lavigne; 1♀ Baidoa, 18.xi.1983, Lavigne; 1♀ Baidoa, 23.xi.1983, Lavigne; 1♀ Baidoa, 7.xi.1985, Lavigne.

Notes: Oldroyd (1940: 316) discusses Engel's (1932) record of *H. caliginosus* from Neboi. Having seen one such specimen I can confirm that it is not *caliginosus* but agrees well with Oldroyd's *engeli* males from Bohotle.

Distribution and biology: All verified localities for *engeli* are in Somalia. While most of the material was collected in November, the Neboi paratype was apparently collected in June (Table 1).

Hoplistomerus erythropus Bezzi, 1915

Figs 1, 11–13

Hoplistomerus erythropus: Bezzi 1915: 224–226; Hull 1962: 96; Oldroyd 1980: 350 (catalogue).

Diagnosis: Size: Small (wing length from humeral cross-vein to tip <8 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:1.0:3.5 (i.e. scape and pedicel approximately equal; postpedicel 3.5 times length of scape). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur small. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia covering its posterodistal half. Prothoracic coxa and prosternum both dark red-brown (there is some variation in holotype). Prothoracic femur orange. *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 11–13.

Type specimens studied: SOMALIA: 1♀ **holotype**, 'Mogadisiu [Mogadishu, 02°02'N:45°21'E] / Moggio 1913' [white, handwritten], '*Hoplistomerus* / *erythropus* / ♀ n.sp.' [yellowish, handwritten] (MZUF). Condition: Fair. Both antennae broken off beyond pedicels, left wing stuck to locality label with glue.

Note: Bezzi (1915) compares the species with *zeliminus*, *leucocomus* and *nigrescens* (his spelling).

Other specimens studied: KENYA: 1♂ 1♀ Laisamis [01°36'N:37°48'E], 11.xii.1969, Irwin & Ross, 2000 feet (CASC). SOMALIA: 3♂ Baidoa [03°04'N:43°48'E], 10.xi.1953, Desert Locust Survey (BMNH); 1♀ Waraable [Warable, 02°55'N:43°49'E], 13.vii.1986, Lavigne. UGANDA: 1♀ Gulu [02°47'N:32°18'E], iv–v.1925, Carpenter (NMNH).

Notes: Oldroyd (1940) gives the year of Bezzi's publication as 1914, but later (1980) correctly gives the year as 1915. While Bezzi's description was based on a single female from Mogadishu, Oldroyd (1940) provided a redescription based on males and females from Bohotle. I have studied this material as well as other material (listed above) and have found inconsistency in male genital form. As the female holotype appears more similar to the material listed above (smaller, metethoracic femur less inflated) than to the Bohotle specimens I present new illustrations of the male genitalia now thought to be representative of the species. The Bohotle specimens have been used for the description of a new species (*H. pegos*). As a consequence of these actions, it should be noted that the form of the *erythropus* gonostylus illustrated by Oldroyd (1940), who subsequently (1970) compared the genitalia with *garambensis*, is no longer considered correct.

Distribution and biology: Known from three localities in Somalia, and one each in Kenya and Uganda. The species has been collected in April, May, July, November and December (Table 1).

Hoplistomerus garambensis Oldroyd, 1970

Figs 14–17

Hoplistomerus garambensis: Oldroyd 1970: 246–247 (fig. 27 ♂ genitalia); 1980: 350 (catalogue).

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.9:? (i.e. scape and pedicel approximately equal; postpedicel missing). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur small. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a narrow posterior strip. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur orange ventrally, dark red-brown dorsally. *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 14–17.

Type specimens studied: DR CONGO: 1♂ **holotype**, 'Holotype' [orange, printed], 'Congo Belge, P.N.G. [= Garamba National Park, 04°10'N:29°30'E] / Miss. H. De Saeger / Ppk. 14/g/2, 4-iv-1952 / H. De Saeger. 3282 [savane arborescente]' [white, printed], '*Hoplistomerus* / *garambensis* Oldr / det. H. Oldroyd, 1965 / Holotype' [white, mostly handwritten] (MRAC). 1♀ **paratype**, 'Paratype', 'Congo Belge, P.N.G. / Miss. H. De Saeger / Ppk. 14/g/7 [not I/a/i], 4-iv-1952 / H. De Saeger. 3298 [not 483]', '*Hoplistomerus* / *garambensis* Oldr / det. H. Oldroyd, 1965 / Paratype' (MRAC). 1♀ **paratype**, 'Paratypus', 'Congo belge, P.N.G. / Miss. H. De Saeger / Akam [= Aka, 03°50'N:28°57'E], 19-v-1950 / Réc, H. De Saeger. 529' (MRAC).

Notes: Oldroyd lists the holotype and three female paratypes stating that they are in IPNC (Institut des Parcs Nationaux (du Congo), Bruxelles). Oldroyd's first listed paratype does not have 'Same data as holotype'—instead of 3282 it is numbered 3298. His second paratype '483. 1/a/1. 1♀ 5.v.1950' was not sent to me for study. Full label data for Oldroyd's third paratype, gender not stated, are provided above. This is also a female. Types seen by me are all in MRAC, not IPNC.

Oldroyd (1970: 248, fig. 26) compared the genitalia to *erythropus*, but see discussion above.

Distribution and biology: Known only from the type series from the Democratic Republic of Congo, collected in November, April and May.

Hoplistomerus miniatus Oldroyd, 1940

Figs 18–20

Hoplistomerus miniatus: Oldroyd 1940: 314 (fig. 5h ♂ clasper); 1980: 350 (catalogue); Hull 1962: 96.

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye narrower than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:1.0:3.8 (i.e. scape and pedicel approximately equal; postpedicel more than three and a half times length of scape). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur moderate. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia covering posterodistal half. Prothoracic coxa and prosternum both orange. Prothoracic femur orange. *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 18–20.

Type specimens studied (BMNH): KENYA: 1♀ **holotype**, 'Neboi [possibly SOMALIA, see above under *engeli*] / 9.vi.22, 'Kenya Colony / Northern Frontier Distr. / Juba R. [00°15'S:42°38'E] / Dr. J. O. Bevan', Pres. By / Imp. Inst. Ent. / Brit. Mus. / 1931–138', 'Holotype / det. H. Oldroyd 1940 / *Hoplistomerus* ♂ / *miniatus*'; 1? [cited as ♀ but may be ♂ with genital bulb missing] **paratype**, 'Para- / type', 'E. Africa Protectorate: / Guasa Nyiro R. [= Ewaso Ngiro, 01°09'S:35°46'E] / Betw. Chanler's [not Chandler's as cited by Oldroyd] Falls / and Lorian Swamp. / 20.iii.1912. / F. C. Selous. / 1912–239.'

Other specimens studied: KENYA: 1♂ Pays Tourkouana, Lac Rodolphe [= Lake Rudolf now Lake Turkana, 03°40'N:30°20'E], vi–viii.1903, Mission Du Bourg de Bozas (MNHN). SOMALIA: 2♀ Mogadishu [02°02'N:45°21'E], 10.v.1986, Lavigne. UNKNOWN: 1♂ Afrique, Oula Oula, 14.vii (MNHN).

Note: The specimen from Oula Oula appears to be typical of the species. The only place going by the name of Oula [09°30'N:13°08'W] that I could find is in Guinea. As I find it difficult to accept this as a possible locality for the species, I list the specimen as having unknown provenance.

Distribution and biology: The species is found with certainty in Kenya and Somalia, and is collected from March through to July (no June records) (Table 1). The species may be sympatric with *erythropus* (at Mogadishu) and *engeli* (at Neboi).

Hoplistomerus nobilis Loew, 1858

Figs 2, 21–23, 42

Hoplistomera nobilis: Loew 1858: 357; 1860: 120–121.
Laphria serripes: Loew 1862: 10. Misidentification of Mozambique material (Oldroyd 1940: 317).
Hoplistomerus nobilis: Oldroyd 1940: 316–317 (figs 1a ♂ terminalia, 1b antenna, 1c head, 2 metathoracic leg, 3 wing, 5i ♂ clasper); 1980: 350 (catalogue); Hull 1962: 96 (figs 87 antenna, 1977 ♀ terminalia, 2103 & 2106 ♂ terminalia).

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.9:3.6 (i.e. scape and pedicel approximately equal; postpedicel more than three times and a half times length of scape). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur large. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a narrow posterior strip and small distoposterior area. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur dark red-brown (tips may be paler). *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 21–23.

Type specimens studied: 1♂ **lectotype** 'Mozambique / Tette [16°10'S:33°36'E] / Peters S.' [blue, printed], '427' [white, printed], 'Typus' [red, printed], 'Zool. Mus. / Berlin' [white, printed]. Condition: Good. Left mesothoracic leg broken off beyond trochanter. 1? **paralectotype** [presumed ♀], 'Tette / Peters' [blue, handwritten], '*nobilis*' [white, handwritten, small violet, no writing], 'Coll. H. Loew' [white, printed], 'Typus' [red, printed], 'Zool. Mus. / Berlin' [white, printed]. Condition: Poor. Right antenna broken off beyond pedicel. Abdomen broken off beyond T4 (ZMHB).

Note: In describing the species, Loew (1858) indicated that he had seen both sexes, but did not record how many specimens were available. Both ZMHB specimens, labelled as types, appear to be the only ones seen by Loew and must be considered syntypes. The male is in better condition than the female and is accordingly designated here as lectotype.

Other specimens studied: ANGOLA: 1♀ Cuche [14°36'S:16°58'E], x–xi.1951, Padre Eduardo (CASC). BOTSWANA: 1♂ Kasana, 1725CC, 29–31.xii.1984, Forchhammer; 1♀ Botswana to Chobe S.W.A., Serendellas [18°50'S:24°57'E], 30.xii.1980, Reavel, grass & herbs in shade; 4♂ 2♀ Botletle R. near Maun, 20°00'S:23°22'E, 10–20.xii.1990 (1♂ 1♀) 1–7.i.1991 (3♂ 1♀), Bestelink, 1000 m, *Acacia* thornveld; 1♂ Botletle R. near Maun, 20°00'S:23°22'E, 14.i.1991, Bestelink, 1000 m, *Acacia* thornveld; 1♀ Damara Pan [22°06'S:22°27'E], 15–21.iv.1930, V.-L. Kal. Exp.; 3♂ Farmer's Brigade, 22°25'S:26°44'E, xi.1989 (2♂) 28.xi.1990 (♂), Forchhammer, Malaise; 1♂ Farmers Brigade, Serowe, 22°26'S:26°44'E, i.1991, Forchhammer, Malaise; 1♂ Serowe [22°25'S:26°44'E], 27.ii.1982, Forchhammer; 1♂ 1♀ Serowe, 27.xi [♂] 10.xii.1982, Forchhammer (UZMD); 1♂ Serowe, 3.xii.1982, Forchhammer, day; 1♂ Serowe, ii.1983, Forchhammer, Malaise; 1♂ Serowe, 14.xi.1983, Forchhammer; 1♂ 1♀ 6 km SE of Serowe, 19.xi.1983, Forchhammer, grassveld / *Eucalyptus*; 11♂ 12♀ Farmers Brigade, 5 km SE of Serowe, 2226BD, 6.ii.1984 (♀), 8.ii.1984 (♂), 18.ii.1984 (♂), 13.i.1985 (♀), 19.iii.1985 (♀), 15.iv.1985 (♀), 16.iv.1985 (♀), xii.1985 (4♂), i.1986 (1♂ 2♀), ii.1986 (3♂ 4♀), iii.1986 (1♂ 1♀), Forchhammer, Hillside N slope, Malaise trap; 1♂ Farmers Brigade, 5 km SE of Serowe, 2226BD, 7.iii.1984, Forchhammer, Hillside N slope, bush; 1♀ Farmers Brigade, ca. 5 km SE Serowe, 2226BD, 31.i.1985, Forchhammer, *A. tortilis* woodland, forest nursery, Malaise; 1♀ Forestry nursery, 6 km SE of Serowe, 2226BD, iii.1986, Forchhammer, 1300 m, Malaise trap; 1♀ Farmers Brigade, 5 km SE of Serowe, 2226BD, 9.xi.1984, Forchhammer, Hillside N slope, Mercury vapour trap; 1♂ 1♀ Farmers Brigade, 5 km SE of Serowe, 2226BD, xi.1987 (♀) i.1988 (♂), Forchhammer, Hillside N slope, Malaise trap; 2♂ 5♀ Farmers Brigade, Serowe, 2226BD, x.1988 (♀) 8.xii.1988 (♂) xi.1989 (♀) i.1990 (♀) ii.1990 (2♀) iii.1990 (♂), Forchhammer, Malaise; 2♂ 6♀ Farmers Brigade Serowe, 2226BD, xii.1989 (1♂ 2♀) iii. 1990 (♀) iv.1990 (1♂ 3♀), Forchhammer, mercury V.L. (NHRS); 1♀ Palapye [22°33'S:27°08'E], 4.iii.1934, Ogilvie (BMNH); 1♂ Molepolule [24°25'S:25°31'E], 4.iii.1963, Schofield; 1♂ 2♀ Metsimaklaba [24°32'S:25°29'E], 7–12.iii.1930, V.-L. Kal. Exp. (NMNH 1♂ 1♀, NMSA ♀); 3♀ Gaberones [24°39'S:25°54'E], 1915, Ellenberger (MNHN). KENYA: 1♀ Mombasa [04°02'S:39°40'E], 27.ix.1927, Bequaert (MRAC). LESOTHO: 1♂ 4♀ Mamathes [29°08'S:27°51'E], 7.xii.1947 24.xi.1949 (♂) 26.xii.1951 24.ii.1951 6.i.1953, Jacot-Guillarmod (AMGS); 1♂ Mamathes, 3.i.1948, Jacot-Guillarmod (MZLU);1♂ 2♀ Mamathes, 21.xii.1947 14.iii.1948 28.xi.1949 (♂), Jacot-Guillarmod (NMNH); 2♀ Mamathes, 13.xi.1945 17.xi.1945, Bevis (DMSA); 2♀ Mamathes, 17.xi.1945 23.xi.1945, Bevis (NMNH); 1♀ Mamathes, 10.ii.1946, Guillarmod (DMSA); 1♀ Roma, Maseru Distr. [29°27'S:27°44'E], i.1963, Stuckenberg, 550 ft, valley floor, old lands; 1♀ Vallée de H-Orange [? Locality], 1900, Ellenberger, 1500 m (MNHN). MALAWI: 1♀ Senga Bay, 20 km NE Salima, 1334DC, 7–8.iii.1987, Londt, woodland on hill behind hotel. MOZAMBIQUE: 1♂ 2♀ Tambara [15°07'S:32°03'E], ii.1929, Lesne (MNHN); 1♀ Nyaka [16°40'S:32°42'E], ii.1924, Lawrence (SAMC); 1♀ Chiramba [16°55'S:34°39'E], i.1929, Lesne (MNHN); 2♂ 1♀ Chiouzi, Env. De Chiramba, 23.iv.1929, Lesne (MNHN); 1♀ Moulima [?], Moyen Sangadzé [R., 17°12'S:34°55'E], 21.iii.1929, Lesne (MNHN); 2♂ 2♀ Haut Sangadzé, Canxixe [17°35'S:34°18'E], 21.i.1929, Lesne (MNHN); 1♂ Nova Chupanga [Mission 18°02'S:35°36'E], i.1929, Surcouf (MNHN); 1♂ Nova Chupanga, v.1928, Surcouf (MNHN); 1♂ 1♀ Chimoio [18°08'S:34°29'E], iii.1928, Lesne (MNHN); 1♀ Nhampalamassa [Nhampala Monte, 18°33'S:33°56'E], 1929, Lesne (MNHN); 1♂ Vallée du Pungoué, Guengére [19°05'S:34°15'E], i.1906, Vasse (MNHN); 1♀ Env. Vila Pery [19°08'S:33°29'E], iv.1928, Lesne (MNHN); 1♂ 1♀ Macequete [21°56'S:34°14'E], ii.1928, Lesne (MNHN); 2♀ Inhambane [23°51'S:35°29'E], i.1924, Jones (SAMC); 3♂ 3♀ Mapulanguene [24°29'S:32°05'E], 3–6.iii.1964, Moore (NMNH); 2♂ Moamba [25°36'S:32°15'E], 9–12.iii.1964, Moore (NMNH); 1♂ Lour. Marques [= Maputo, 25°58'S:32°34'E], 19.v.1921, Hardenberg (NMNH); 2? L. Marques, Howard (NMNH); 1♂ 1♀ Bas Sangadzé, Pindiriri [?], 6 [♀] 9 [♂] iv.1929, Lesne (MNHN); 6♂ 3♀ Chiqubo [?], 11–20.ii.1964, Moore (NMNH); 2♀ Mombawe [or Mambawe?], 22–25.iii.1964, Moore (NMNH). NAMIBIA: 1♀ Katima Mulilo, 1724AC, Du Preez; 1♂ 1♀ Etosha Pan [18°36'S:16°41'E], 3–6.iii.1969, Lamoral; 2♂ 4♀ Abachaus [1814CC], Damaraland, xii.1951, Hobohm; 1♂ 1♀ Abachaus, Otjiwarongo Distr., iii.1950, Hobohm; 4♂ 1♀ Zesfontein [19°08'S:13°37'E], ii.1925, Mus. Exp. (SAMC); 1♂ Tsumeb [19°16'S:17°39'E], 1920, Koecbig (SAMC); 3♂ 1♀ Okosongominigo, 2017CA, 6.iii.1979, Whitehead (SAMC); 2♂ 3♀ Outjo [20°12'S:15°53'E], i.1925, Mus. Exp. (SAMC); 1♂ 2♀ Otjimarongo [Otjiwarongo, 20°39'S:17°05'E], Werner (SMNS); 1♂ 3♀ Hochfeld, 21°29'S:17°50'E, 18.iii.1984, Londt & Stuckenberg, Acacias, long grass near cattle pens; 3♂ Okahandja [21°59'S:16°37'E] / 27.ii.1938, Gaerdes (SMNS); 1♀ Okahandja, 30.i.1937 (SMNS); 1♂ Nubuamis 37 Windhoek, 2217AC, 5.i–20.iii.1975, Malaise; 1♀ 24 km N Witvlei, 22°16'S:18°26'E, 18.iii.1984, Londt & Stuckenberg, *Acacia* thornveld and grassy verge of road; 3♀ Ongeama [22°19'S:17°13'E], 23–28.i.1970, Lindner (SMNS); 1♂ 1♀ Gobabis [22°27'S:18°58'E], ii–iii.1971; 2♂ 1♀ Valencia 42 farm, Windhoek Distr. [23°08'S:16°28'E], 14–24.iv.1972, Strydom & Jones; 1♀ Keetmanshoop [26°35'S:18°08'E], 5.i.1943; 2♂ 5♀ Warmbad [28°27'S:18°44'E], ii.1925, Mus. Exp. (SAMC); 1♂ 1♀ Kalahari [no locality given], Schultze (ZMHB); 9♂ 2♀ Südwest Afrika [no locality], i. ii. iii. x. 1954 55 & 56 [various dates scribbled under labels], Werner (SMNS); 1♀ S.W. Afrika [no locality], 31.xii.1937, Gaerdes (SMNS). SOUTH AFRICA: 1♀ Messina Nat. Res., 22°24'54"S:30°05'12"E, 14.ii.2005, Londt & Dikow, 487 m, Mopane dry woodland Sand R.; 1♂ Messina, 2228BA, 28.iv.1976, G vd M; 1♂ Messina, 18.xii.1972–8.i.1973, Holm (SANC); 1♂ Pafuri [22°25'S:31°18'E], K.N.P., 24–28.iv.1961, Rorke; 1♂ Kruger Nat. Park, Pafuri, Bobomene Camp, 22°26'S:31°12'E, 200 m, 31.i–3.ii.1994, Oberprieler (SANC); 1♂ 2♀ Kruger Nat. Park, Pafuri, 22°26'S:31°12'E, 23–29.i.1984, Eardley (SANC); 5♂ 2♀ Kruger Nat. Park, Pafuri, 22°26'S:31°12'E, 264 m, 20–24.i.1985, Mansell Prinsloo & Swain (SANC); 1♀ Kruger Nat. Park, Pafuri, 22°26'S:31°12'E, 17.iv.1984, Braack (SANC); 1♂ 1♀ 6 km N of Vivo, 2229CC, 23–24.ii.1980, Londt & Schoeman, bushveld veget. & old lands; 1♂ 3♀ Pafuri, N Kruger Nat. Park, 22°27'S:31°17'E, 22–23.iv.1981, Miller & Stabbins, nr Levubu R.; 1♂ Soutpan, Soutpansberge, 2229CD, 23–24.ii.1980, Londt & Schoeman, bushveld vegetation; 1♀ Pafuri, Kruger Nat. Park, 2231AC, 29.xi.1973, v. Reenen; 1♀ Langjan Nat. Res., 22°52'S:29°14'E, 10–20.i.1980, Prinsloo (SANC); 1♂ 1♀ Happy Rest Nat. Res., 22°59'S:29°46'E, 10.iii.1990, Eardley (SANC); 1♂ Blouberg Nat. Res., 23°02'S:29°04'E [2329AA], 22.xi.1997, Barraclough & James, 2900 ft, bushveld; 1♀ Louis Trichardt [= Makhado, 23°03'S:29°54'E], i–ii.1928, Lawrence (SAMC); 1♀ Blouberg [23°07'S:28°59'E], 10.i.1955, Transvaal Mus. Exp., 6000–6714 ft; 1♂ Blouberg, 16–21.i.1955, Transvaal Mus. Exp.; 2♂ Hans Merensky Nat. Res., 23°40'S:30°39'E, 27–30.xi.1981, Mansell & Prinsloo (SANC); 1♂ Lapalala Nat. Res., 23°52'52"S:28°20'19"E [2328CD], 16.ii.2005, Londt & Dikow, 1318 m, *Acacia–Combretum* woodland; 3♂ Polokwane Nat. Res., 23°57'23"S:29°29'07"E [2329CD], 12.ii.2005, Londt & Dikow, 1318 m, *Acacia* woodland on rocky slope; 1♀ Beacon Ranch 20 km NW Gravelotte [23°57'S:30°37'E], 17.ix.1978, Brothers & J-Guillarmod; 1♀ Beacon Ranch, Gravelotte [23°57'S:30°37'E], i.1966, Brothers (AMGS); 1♂ Mogol Nat. Res., Ellisras Distr., 23°58'S:27°45'E, 28.i.1988, Uys (SANC); 1♂ 1♀ Sedula, nr Leydsdorp [23°59'S:30°30'E], 1.iii.1928 / v. Son; 1♂ Ellisras, 2327DB, 30.i.1978, Londt JGH, grass near trees on Mokolo R. banks; 1♀ Shingwidzi, Kruger Nat. Park, 2331AB, 1.xii.1973, v. Reenen; 2♂ Letaba, Kruger Nat. Park, 2331DC, 3–6.xi.1973, v. Reenen, riverine forest; 2♂ Shilouvane Ztb. Distr. [Shiluvane, 24°02'S:30°16'E], 19 [not completed], Junod; 1♀ Shilouvane, Junod (MCMI); 1♀ Malta Forest 15 km W Ofcolaco [24°10'S:30°14'E], 21.ii.1980, Londt & Schoeman, road & forest margin; 1♀ Malta, Ptbg. [Pietersburg = Polokwane, 23°54'S:29°27'E], 3.ii.1927, Van Son; 1♂ Marico [24°13'S:26°54'E], ii.1973, Scholtz; 1♀ Marico, 27.xii.1929, WKR; 1♂ Marico, i.1918 (SANC); 1♂ Chuniespoort Transvaal [24°13'S:29°32'E], i.iv.1979, Schoeman; 1♀ Waterberg nr Potgietersrus, 24°18'S:28°50'E, 18.i.1980, Eardley (SANC); 1♂ Strijdom Tunnel, 24°25'S:30°38'E, 24–25.xi.1981, Mansell (SANC); 2♀ Groenfontein, 35 km E Thabazimbi, 24°34'S:27°45'E, 27.xi.1980, Kok & Van Tonder (SANC); 1♀ Rietfontein nr Ohrigstad [24°43'S:30°34'E], 24.ii.1981, Prinsloo (SANC); 1♂ Kruger Nat. Park, Skukuza, 24°59'S:31°35'E, 292 m, 14–17.i.1985, Prinsloo (SANC); 1♂ Kruger Nat. Park, Skukuza, 26.v.1969, Starke (SANC); 1♂ 30 km W Hoedspruit [24°23'S:30°40'E], 27.xi.1978, Brothers & J-Guillarmod; 1♀ Satara, 24°23'S:31°47'E, iii.1978, Theron; 1♀ Naboomspruit [24°31'S:28°43'E, 2428DA], 13.i.1997, Picker; 3♂ 3♀ Nylstroom [24°42'S:28°24'E], 16–31.xii.1921, v. Dam; 1♀ Nylstroom, 16–31.xii.1923, v. Dam; 1♂ 5 mi. W Warmbad [Warmbaths = Bella Bella, 24°52'S:28°17'E], 24–25.ii.1968, Krombein & Spangler (NMNH); 1♂ 1♀ Warmbath, xii.1910, v. Niekerk; 1♀ Het Bad Nat. Res., 24°54'39"S:28°16'49"E [2428CD], 17.ii.2005, Londt & Dikow, 1111 m, *Acacia* woodland, dry sandy soil; 1♂ Lower Sabie R., 17 km E Skukuza [24°59'S:31°36'E], 16.xii.1985, Wright; 1♂ Thabazimbi, 2427CB, 23.ii.1980, Du Toit; 1♂ Drummondlea, 9 km S Potgietersrus, 2428BB, 29.i.1978, Londt, grass under trees; 2♂ Olifants R. nr Balule, Kruger Park, 2431BB, 9.xii.1972, Stuckenberg, riparian woodland; 3♂ Mazithi Dam, 10 km north of Tshokwane, Kruger Park, 2431DB, 6.i.1974, Stuckenberg, grassland; 1♂ Sabie R., 4 km E Skukuza, 2431DC, 9.xii.1972, Stuckenberg, *Ficus* gallery forest; 3♂ 4♀ Vicinity of Skukuza, Kruger Nat. Park, 2431DC, 9–12.iv.1985, Londt, Bushveld; 1♀ Nwamuriwa Mountain summit, 6 km NE of Tshokwane, Kruger Park, 2431DD, 6.i.1974, Stuckenberg; 2♂ 3♀ Lydenburg Distr. [25°06'S:30°27'E], 1896, Krantz; 1♂ Kruger Nat. Park, Pretoriuskop, 25°09'S:31°16'E, 591m, 17.i.1985, Prinsloo (SANC); 1♀ Loskopdam Nat. Res. area, 2529AD, 24.i.1978, Londt, bushveld near river; 1♀ Loskopdam, 25°23'S:29°28'E, 4.iii.1995, Henning; 1♂ Loskopdam, 25°25'S:29°20'E, 3.iii.1995, Nel; 1♀ Komatipoort [25°26'S:31°56'E], 3.vi.1969, Starke (SANC); 4♂ Malelane [25°29'S:31°31'E, 2531BC], ii.1915, Roberts; 1♀ Kruger Nat. Park, Malelane, 30.v.1969, Starke (SANC); 1♀ Loskopdam, 25°30'S:29°20'E [2529CB], 3.iii.1995, De Beer; 2♂ 1♀ Louwscreek [25°38'S:31°18'E], iii.1920, D G v 7 Rob; 1♀ Soutpan, Pretoria Distr., 25°24'S:28°06'E, 11–12.i.1984, Mansell (SANC); 1♂ Hectorspruit [25°26'S:31°41'E], 17.x.1927, Taylor (BMNH); 1♀ Botsalano Game Res., Mogolodi Hide area, 25°33'15"S:25°40'16"E, 18.iii.2003, Londt, 1350 m, *Rhus*, *Acacia* savannah; 1♀ Swartruggens, 25°35'S:24°54'E [coordinates probably reversed], 5.v.1994, Steyn; 1♂ Zwartruggens, Marico, 15.i.1921, Brauns; 1♂ Bray, Graupner farm guest camp, 25.35545°S:23.35738°E, 17.i.2001, Slotow & Hamer, 1058 m, Kalahari sandveld; 1♂ Rustenburg Nat. Res., 25°40'S:27°12'E, 8.xii.1983, Eardley (SANC); 1♂ Rustenburg [25°40'S:27°15'E], xii.1908, Jenkins; 1♀ Cullinan [25°40'S:28°31'E], v. Heerden; 1♀ Roodeplaat [25°41'S:28°18'E], xii.1919, Breyer; 1♀ Rustenburg, 25°42'S:27°10'E [2527CA], 27.11.1999, Le Rouz; 1♀ Pretoria [25°44'S:28°11'E, 2528CA], 17.i.1967, Mohr; 1♀ Pretoria, 21.xii.1970, Jacobs; 1♂ Pretoria, i.1973, Battey; 1♀ Pretoria, iii.1948, MT; 1♂ Pretoria, 20.iii.1928, MD; 1♂ Sandfontein, Pretoria Distr., 22.i.1911, v. Niekerk; 1♂ 1♀ Pretoria, 11.iii.1906, Swierstra; 1♀ Pretoria, 15.i.1902, Swierstra; 2♀ Pretoria, 6.i.1909, Janse; 1♀ Pretoria, 15.i.1902, Swierstra; 1♂ Pretoria, 4.i.1914, Munro; 1♂ Pretoria, 11.xii.1929, Jeppe; 1♀ Fount. Grove [?], Pret. [Pretoria] Distr., 19 [not completed], Swierstra; 1♂ 5 m South of Zoutpan (Pta) [2528AC], 5.i.1968, Jones; 1♂ Pumalani, 2528CB, Bailnard; 1♂ 1♀ Boekenhoutskloof, 30 km NE

Pretoria [2528CB], 5.iv.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 27.i.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 4.iii.1977, Bernon; 1♂ 1♀ Boekenhoutskloof, 30 km NE Pretoria, 24.iii.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 17.ii.1977, Bernon; 2♀ Boekenhoutskloof, 30 km NE Pretoria, 22.iii.1977, Bernon; 1♂ Boekenhoutskloof, 30 km NE Pretoria, 12.iv.1977, Bernon; 1♂ Boekenhoutskloof, 30 km NE Pretoria, 16.iv.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 24.xi.1977, Bernon; 1♂ Boekenhoutskloof, 30 km NE Pretoria, 25.xi.1977, Bernon; 1♂ Boekenhoutskloof, 30 km NE Pretoria, 2.xii.1977, Bernon; 1♂ Boekenhoutskloof, 30 km NE Pretoria, 3.xii.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 7.xii.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 29.iii.1977, Bernon; 1♀ Boekenhoutskloof, 30 km NE Pretoria, 21.i.1977, Bernon (SANC); 4♂ Boekenhoutskloof, 30 km NE Pretoria, 20.ii.1977, Bernon; 1♂ Pretoria, 2528CC, ii.1979, Serfontein; 1♂ Hartbeespoort Dam nr Pretoria, 25°42'S:27°51'E, 14.ii.1982, Grobbelaar (SANC); 1♀ Pretoria [25°44'S:28°11'E], 22.iv.1941, Wagner (SAMC); 1♀ Pretoria, 25.i.1919, Brauns (MRAC); 1♂ Pretoria, 19.ii.1913, Munro (NMNH); 1♂ Pretoria, 10.xii.1906, Howard (NMNH); 1♀ Pretoria, 10.ii.1914 (SANC); 1♀ Pretoria, 4.iii.1917 (SANC); 1♀ Barberton [25°47'S:31°03'E], 9.x.1919, Munro; 1♂ Barberton, 25°48'S:31°03'E, 20–21.iii.1979, Moolman (SANC); 1♀ Noordkaap R. at Barberton Nelspruit Road, 2530DB, 7.xi.1970, Stuckenberg, river bank bushveld; 1♂ 2531AC, 2.xi.1980, Walt; 1♀ Mafikeng Game Res., Kolobe Drinking Pond, 25°50'59"S:25°43'10"E, 16.iii.2003, Londt, 1320 m, *Rhus lancea* savannah; 2♂ 2♀ Mafikeng Game Res., Kolobe Drinking Pond, 25°50'59"S:25°43'10"E, 17.iii.2003, Londt, 1320 m, *Rhus lancea* savannah; 1♂ Koster [25°52'S:26°54'E], 2.i.1927; 1♀ Joh'burg [Johannesburg, 26°12'S:28°05'E], i.1905, Cregoe (BMNH); 2♂ JHB [Johannesburg], ii.1953, LeMare; 1♂ Joh-burg [Johannesburg], 31.xii.1942, Anderssen; 1♂ Gemsbok Pan [26°20'S:24°48'E], 23.iv–5.v.1030, V.-L. Kal. Exp.; 1♀ Heidelburg [26°29'S:28°21'E], 21.i.1921, Munro (NMNH); 1♀ P'chefstr'm [Potchefstroom, 26°43'S:27°05'E], 13.i.1911, Moor; 1♂ 1♀ Potch [Potchefstroom], 21.xii.1942, v. Heerden; 1♂ Vryburg [26°57'S:24°44'E], i.1917, Brauns; 1♀ Vryburg, i.1919, Brauns (NMNH); 1♂ Manguzi R. nr Maputa [26°59'S:32°45'E], xi–xii.1945, Bell-Marley (DMSA); 1♂ 1♀ Bordeaux, 2624CB, 23.ii.1980, Whitehead (SAMC); 2♂ 4♀ Delarey [Delareyville, 2625CB], i.1917, Brauns; 1♂ 1♀ Delarey, i.1917, Brauns (SAMC); 2♂ Delarey, i.1919, Brauns; 1♀ De la Rey, i.1919, Brauns (MRAC); 1♂ Delarey, i.1917, Brauns (MCMI); 1♂ 1♀ Ndumu Game Res. Rest Camp, 2632CD, 23–9.xi.1977, Brothers & J-Guillarmod, 95 m, Malaise; 1♀ Ndumu Game Res. Rest Camp, 2632CD, 15.ii.1978, Brothers, 95 m, Malaise; 1♀ Cecil Mack's Pass, Ingwavuma Distr. [27°04'S:31°59'E], ii.1957, Stuckenberg; 2♂ 1♀ Cecil Mack Pass, Ingwavuma Distr. 2731BB, 27.ii.1971, Stuckenberg; 1♂ 2♀ 15 km SE Ingwavuma, 2732AA, 21.ii.1979, Londt, bushy area with big trees; 2♀ 20 km N of Hotazel, 27°07'S:22°59'E, 14.iii.1991, Whittington & Londt, 1050 m, Kuruman R. banks; 1♀ Drakenstein [27°09'S:22°48'E], 12.iii.1943, v. Heerden; 2♂ 1♀ 35 km N Jozini, 27°11'S:32°04'E, 22.i.1981, Oberprieler (SANC); 3♂ 2♀ 14 km S of Hotazel, 27°19'S:22°54'E, 14.iii.1991, Whittington & Londt, 1050 m Ga-Mogara R. bed; 2♂ 4♀ Bothaville [27°22'S:26°37'E], 22.xi.1998 [1♂] 25.xi.1898 [1♀] 15.xii.1898 [1♂ 1♀] 15.ii.1899 [1♀, no date 1♀], Brauns (NHMW); 1♀ Bothaville, 22.xi.1998, Brauns (NMNH); 2♂ 2♀ Magude [Magudu 27°32'S:31°39'E], x.1918, Swierstra; 2♂ S A Lombard Nat. Res., 27°37'S:25°29'E, 12.iii.1991, Londt & Whittington, 1250 m, sand, *Acacia* thornveld; 1♀ Mkuze Game Res., 27°37'S:32°14'E, 8–12.iii.1987, Weaving (AMGS); 1♂ Mkuzi Game Res., 27°38'S:32°14'E, 12.i.1994, Natal Mus. Exp., 160 m, Nsumu Pan Area; 1♂ Mkuzi Game Res. [27°38'S:32°15'E], 8.xii.1986, JOW; 2♂ 1♀ Mkuze Game Res., 1–2.iv.1984, Weaving (AMGS); 1♀ Bube Hide, Mkuze Game Res., 31.iii.1984, Weaving (AMGS); 2♂ Bloemhof Dam (reserve), 27°38'05"S:25°40'13"E [2725DA], 12.iii.2003, Londt, 1230 m, *Acacia*, *Ziziphus* savannah; 1♂ Sandveld Nat. Res., 27°40'S:25°45'E, 24–25.ii.1993, Eardley (SANC); 1♂ Sandveld Nat. Res., 27°40'S:25°45'E, 25.ii.1993, Adam (SANC); 1♀ Mkuzi Game Res., 27°40'S:32°19'E, 12.i.1994, Natal Mus. Exp., 30 m, Fig Forest Trail; 1♂ 1♀ Kroonstad [27°40'S:27°14'E], 10.i.1965, Brothers (AMGS); 1♀ Kroonstad, 14.xii.1966, Brothers (AMGS); 2♂ 3♀ Kube Yini Game Res., 27°48'S:32°14'E, 10–14.i.1994, Natal Mus. Exp., 360 m; 1♂ Olifantshoek [27°56'S:22°44'E], 20.ii.1980, Whitehead (SAMC); 2♂ 4♀ 5 km W Hotazel, 2722BB, 2.iii.1982, Londt & Schoeman, Acacias / Grass / Shrubs; 1♂ 20 km N Jozini, 2732AC, 28.xi.1971, Irwin, 750 ft, dry hillside; 1♂ Nzimane R., Hluhluwe Res. [28°01'S:32°16'E], 20.xi.1995 [Reavel], on grass; 4♂ Hluhluwe Game Res., 18–21.iii.1985, Weaving (AMGS); 2♀ Hluhluwe / Umfolozi Res., 28°05'S:32°01'E, 31.xii.1995, Londt & Cradock, 150 m, Nzimane R. area; 3♀ Hluhluwe Game Res., 28°05'S:32°02'E, 12–15.i.1995, Barraclough, 180 m, for. margins & riv. gullies; 2♂ Hluhluwe / Umfolozi Res., 28°09'S:32°02'E, 29.xii.1995–3.i.1996, Londt & Cradock, 160 m, Munyawaneni Camp area; 1♀ Senekal [28°19'S:27°36'E], 12.xii.1941, Ac US; 1♀ Senekal, 10.xii.1941, Ac US; 1♀ Senekal, ii.1941; 1♂ Senekal, i.1942, Ac US; 1♀ Smith's farm, St Lucia, 28°20'S:32°25'E, 12.i.1986, Reavell, 40 m, grass patch in sandveld forest; 1♀ Upington [28°23'S:21°29'E], 27.xi.1950, Brink & Rudebeck (MZLU); 1♂ Witsand Farm, 28°32'S:22°30'E, 2–4.ii.1979, Lamoral Bampton & Barnley, Malaise; 1♂ Adullam Farm near Clarens, 28°34'S:28°28'E, 15–18.i.1986, Eardley (SANC); 1♂ Mfongosi [28°42'S:30°48'E], 1914, Jones; 1♀ Mfongosi, xii.1911, Jones; 1♂ 1♀ Mfongosi, iii.1914, Jones (DMSA); 3♂ 2♀ M'fongosi, iv–v.1934, Jones (SAMC); 1♀ M'fongosi, ii.1912, Jones (SAMC); 1♂ M'fongosi, xii.1911, Jones (SAMC);

1♀ M'fongosi, iv.1934, Jones (SAMC); 1♂ M'fongosi, xii.1914, Jones (SAMC); 1♀ M'fongosi, iv–ix.1934, Jones (SAMC); 1♂ 1♀ M'fongosi, xii–ii.1935, Jones (SAMC); 1♀ M'fongosi, iii–iv.1935, Jones (SAMC); 1♂ 1♀ Kimb. [Kimberley, 28°45'S:24°46'E, 2824DD], 1896; 1♂ 1♀ Weenen [28°51'S:30°05'E], iv.1924 (♂) i–iii.1927 (♀), Thomasset (BMNH); 1♂ Weenen, iv.1924, Thomasset; 1♂ 1♀ Weenen, xi–xii.1923, Thomasset (NMNH); 1♂ Weenen, 2840 ft, iii.1924, Thomasset (SANC); 1♀ Insuzi R. [28°52'S:31°02'E], 25.ii.1962, Bevis (DMSA); 1♂ 1♀ Groblershoop [28°53'S:21°59'E], ii.1978, Moolman (SANC); 1♀ Frere [28°53'S:29°46'E], 8.xi.1913, Dibben (DMSA); 1♀ Heavitree Frere, 9.iv.1913, Dibben (DMSA); 1♂ 1♀ Heavitree, 25.i.1914 (♂) 29.i.1916, Munro (NMNH); 1♂ Roaring Sands Resort nr Witsand, 2822CB, 17–18.iii.1982, Londt & Schoeman, *Acacia* woodland / Sandy area; 1♀ 35 km W Kimberley, 2824CB, 17.iii.1982, Londt & Schoeman, Acacias / grass / sand; 1♂ 1♀ 20 km W Tugela Ferry, 2830CA, 26–27.ii.1977, Miller, Malaise; 1♀ Junction of Blaawcrantz [Bloukransrivier] & Tugela rivers [2830CC], x.1896, Marshall (MCMI); 1♂ Estcourt [29°00'S:29°53'E], xii.1896; 1♀ Estcourt, xii.41, Marley (SAMC); 1♀ Estcourt, ix–x.1896, Marshall (BMNH); 1♂ Will Brook Estcourt, Wroughton (DMSA); 1♂ Mhlopeni Ranch [29°00'S:30°25'E], 12–14.x.1990, Farquharson; 1♂ Mlopheni [sic] R., Muden, 29°01'S:30°25'E, 24.iv.1991, Whittington, 900 m, dry bushveld, riverine; 3♂ 3♀ Mhlopeni Nat. Res., 29°01'13.0"S:30°25'01.6"E, 13.ii.2004, Londt & Dikow, 860 m, *Acacia* savannah; 2♂ 1♀ Mhlopeni Nat. Res., 29°01'09"S:30°24'56"E, 15.iii.2000, Londt & Dikow, 900 m, *Acacia* thornveld; 1♀ Mhlopeni Nat. Res., Muden, 29°01'S:30°25'E, 24.iv.1991, Evenhuis; 1♂ Bloemfontein [29°10'S:26°00'E], 23.i.1918, Brain; 1♀ Bloemfontein, 3.xii.1920, Irving (NMNH); 1♂ Harold Johnson Nat. Res., 29°12'S:31°26'E [2931AB], 18.xii.1996, Barraclough, coastal forest & margins; 1♀ Harold Johnson Nat. Res., 29°13'S:31°26'E, 14.i.1994, Natal Mus. Exp., 40 m, grassland, forest edge; 1♂ 1♀ 18 km NNW of Marydale, 29°15'S:22°04'E [2922AC], 18.iii.1991, Whittington & Londt, 970 m, open *Acacia* savannah; 1♂ New Hanover, Natal [29°21'S:30°32'E], 16.i.1915, Hardenberg; 1♂ Dewets d. [Dewetsdorp, 29°35'S:26°40'E], 11.ii.1987; 1♀ Tongaat [29°35'S:31°08'E], 1908–9, Burnup; 1♂ 1♀ Umhlanga [29°43'S:31°05'E], 15.ii.1892, Marley (SAMC); 2♂ Camperdown [29°44'S:30°32'E], 11.xii.1908, Leigh; 1♂ Camperdown, 11.iii.1908, Leigh; 1♀ Camperdown, 14.xii.1908, Leigh; 1♀ Krantz'K [Krantzkloof, 29°45'S:30°51'E], 7.iv.1917, Marley; 1♀ Kloof [29°47'S:30°50'E], 7.ii.1915, Marley (SAMC); 1♂ Kelvin Grove, 29°50'S:29°20'E, 4.iii.1995, Cradock; 1♀ Sarnia [29°50'S:30°52'E], 22.ii.1925, B-M; 1♂ 1♀ Durban [29°51'S:31°01'E], xii.1915, Marley; 1♀ Durban, 1.iv.17, Chubb (DMSA); 1♀ Durban, 5.iv.19, Barker (DMSA); 1♂ Durban Stella, 18.iii.21, Barker (DMSA); 1♀ Durban, Bell Marley (DMSA); 1♂ 1♀ Port Natal [Durban], 1940, Krauts (SMNS); 1♀ Port Natal [Durban, 29°51'S:31°01'E] (NHMW); 1♀ Pt Natal [Durban], 1844, Poeppig (NHMW); 3♂ Natal, near Durban, Stella Bush, 6.i.1905, Leigh (OXUM); 1♀ Stella B, i.1915, Marley; 1♀ Shongweni Dam [29°51'S:30°43'E], 24.i.1984, Quickelberge (DMSA); 3♂ Modderpoortspruit 15 km NE of Ladybrand, 2927AB, 28.xii.1982, Stabbins & Miller; 2♂ Mhlopeni Nat. Res. 15 km SE Muden, 2930AB, 22.xii.1983, Londt; 1♀ Mhlopeni Nat. Res. 15 km SE Muden, 2930AB, 4.ii.1984, Londt; 2♂ 1♀ Mhlopeni Nat. Res. 3 km SE Muden, 2930CD, 3.iv.1983, Londt; 1♂ Mhlopeni Nat. Res. 8 km SE of Muden, 2930AB, 8.iv.1983, Londt, Barraclough & Seymour, thornveld; 1♂ 3♀ Harold Johnson Nat. Res., 2931AB, 27.i.1987, Londt, indigenous bushveld; 1♂ Umkomaas R. valley Josephins Bridge area, 30°00'38"S:30°14'50"E, 11.ii.2006, Londt, 337 m, riverine bush; 4♂ 3♀ Rolfontein Nat. Res., 30°01'19"S:24°45'31"E, 24–26.iii.2006, Londt, 1248 m, mixed *Acacia* Woodland & Rhino midden; 1♂ 1♀ Mackston, Ixopo Distr., 30°01'S:30°18'E, iv.1977, Miller, Malaise; 1♂ 1♀ Ixopo Distr., Mackston, 30°01'S:30°18'E, iv.1977, Miller, Malaise trap; 1♀ Umkomaas R. valley below Josephine's Bridge, 30°05'35"S:30°24'21"E, 12.ii.2006, Londt, 228 m, grassland; 2♂ 1♀ Nhlavivi R., Ixopo Distr. [30°33'S:30°04'E], 17.iii.1957, Stuckenberg; 1♀ Vanwyksfontein, 8 km W of Norvalspont [30°38'S:25°27'E], 19.i.1985, Gess (AMGS); 1♂ Vanwyksfontein, 8 km W of Norvalspont, 24.i.1982, Gess (AMGS); 1♂ Boekenhoutskloof, 30°41'S:28°28'E, 1.ii.1988, Vogt; 1♂ Oribi Gorge [30°42'S:30°15'E], 12.ii.1974, Middlekauff (CASC); 2♀ Josephines Bridge, 3030AA, 20.xii.1984, Londt; 1♂ 14 mi E Middelburg C. Prov. [31°29'S:25°01'E], 8–14.xii.1960, Brown Fürst & Haacke (SANC); 1♂ Umtata [Mthatha, 31°35'S:28°47'E], 18.ii–18.iii.1923, Turner (BMNH); 2♂ 2♀ Port St. Johns [31°38'S:29°32'E], iii.1967, Gess (SAMC); 1♀ Port St. Johns, 13–14.ii.1974, Middlekauff (CASC); 1♂ Port St. Johns, 18–31.iii.1924, Turner (BMNH); 2♂ Bashee Valley bridge, 3128CD, 28.i.1984, Barraclough; 1♀ East London [32°02'S:27°55'E], 20.ii.1919, Munro (NMNH); 1♂ Cradock [32°11'S:25°37'E], i.1947, Moolman; 1♀ Mpofu Game Res., 32°36'S:26°37'E, 20–22.ii.1997, Barraclough & James, 500 m, Mpofu Lodge, thornveld; 1♂ 2♀ Umdala, Fort Beaufort [32°48'S:26°39'E], iii.1954, SA Museum (SAMC); 1♀ East London [33°02'S:27°55'E], i.1947, Nanni; 1♀ Kudu Res., nr Grahamstown, 33°07'S:26°40'E, 21.i.1981, Hulley (AMGS); 1♀ Grahamstown, R.U. Campus, 33°18'S:26°32'E, 1.iv.1976, Shead, 400 m; 1♀ Grahamstown [33°18'S:26°32'E], 12.ii.1971, Londt; 1♀ Grahamstown, 17.ii.1971, Londt; 1♀ Doonside [33°25'S:25°22'E], 15.i.1917, Bevis (DMSA); 1♂ Kasouga [33°39'S:26°45'E], xii.54, MJC (AMGS); 2♂ Stellenbosch [33°56'S:18°51'E], iii.1949, Geogala; 1♂ Louterwater, 3323DC, 1.xii.1979, Londt & Stuckenberg, grass & hillside macchia; 1♂ Swartwaterspoort, 3325BB, 1.i.186, Gess (AMGS); 1♂ S Africa [no locality] (NHMW); 1♂ N Transvaal [? locality], vi.1971, ACS; 1♀ W.v.b. [?], xii.1898, Br. Dr;

1♂ Krabbefontein [?], xii.1902, Breyer. SWAZILAND: 1♀ Lebombo Hills [26°15'S:32°00'E], Junod (BMNH); 3♂ 4 km N of Mafutseni, 26°25'S:31°30'E, 24.iv.1991, Londt & Schoeman, 400 m, Mafuteni Ranch–farm. TANZANIA: 1♂ Kilwa [Distr. 09°05'S:39°00'E] (ZSMC); 9♂ 4♀ Nyassa-See, Langenburg [= Lumbria, 09°34'S:34°07'E], ii [2♂ 1♀], 19–30.iii [1♂ 1♀], iii–iv [3♂ 2♀], iv [2♂], 3.x– 4.xi. [1♂] 1898, Fülleborn (ZMHB). ZAMBIA: 1♂ 1♀ Luangwa Valley S Game Res., Schultz Camp, 13°05'S: 31°50'E, 9–11.xii.1989, Reavell, riverine zone, Malaise; 1♂ 2♀ Haut-Zambéze, Lealui [15°12'S:23°20'E], ii.1915, Ellenberger (MNHN); 1♀ Kafue [15°56'S:28°55'E], 7.i.1981, Grout T. ZIMBABWE: 1♀ Rekomitjie [16°08'S:29°24'E], iii.1988, Phelps, Mopane woodland; 1♀ Rekomitjie Research Station, 1989, Phelps; 1♀ Karoi [16°34'S:31°35'E], 2.v.57, Bennett (AMGS); 1♀ Salisbury [Harare, 17°49'S:31°02'E], 24.xii.1941, Pinhey; 1♂ Hillside [17°50'S:31°05'E], 30.i.1923, Swinburne & Stevenson; 1♂ Hillside, 5.xii.1921, Swinburne & Stevenson; 1♀ Hillside, 12.xii.1922, Stevenson; 1♀ Hillside, 18.ii.1923, Swinburne & Stevenson; 1♂ Hillside, 4.ii.1923, Swinburne & Stevenson; 2♂ 1♀ Sawmills [19°35'S:28°01'E], 11.ii.1923, Swinburne & Stevenson; 1♂ Sawmills, 12.ii.1923, Swinburne & Stevenson; 1♂ Sawmills, 14.xi.1924, Stevenson (MCMI); 1♂ Bulawayo [20°09'S:28°35'E], 4.iii.1923, Stevenson; 1♀ Bulawayo, 3.i.1924, Stevenson (SAMC); 1♂ 1♀ Devuli Ranch [20°09'S:32°07'E], 11.ii.1971; 1♀ Devuli, 24.xi.1965, Cookson; 1♂ Balla Balla [20°27'S:29°03'E], xii.1932, Cuthbertson (BMNH); 2♂ Bubye [21°20'S:29°56'E], 28.i.1976, Hulley (AMGS). UNKNOWN COUNTRY: 1♂ British Caffraria [?], 1862, Caslelueau [? almost illegible] (OXUM); 1♀ illegible label (OXUM); 1♂ Sndimoe [? Indimoe], i.1917, Brauns (NMNH).

Notes: Loew's (1858) short description in Latin is based on '♂ & ♀' from 'Caffraria (Wahlb.), Mozambique, (Peters).' The two syntypes from Mozambique are accounted for, but the Wahlberg material from Caffraria (= South Africa and southeast Botswana) has not been seen. Loew (1858) also gives '*Laphria serripes* Loew. *Ber. Berl. Ac.* 1852.' as a synonym. I have not seen the 1852 paper, but assume that he misidentified some specimens.

Distribution and biology: A very widely distributed species that has been collected in every month of the year except July and August (mid-winter) (Table 1). Although most records are for southern African countries (Fig. 42) the species is also recorded from Angola, Zambia, Mozambique, Malawi, Tanzania and Kenya. Little variation of note can be detected over this extensive range. In southern Africa it is interesting to note that the distribution closely mirrors the distribution of grassy biomes (Savannah and Grassland), with few records from areas categorised as Desert, Succulent Karoo or Fynbos (refer to map of biomes published by Van Wyk and Smith (2001)). An explanation for this may include the fact that these flies have a predilection for dung beetles that are associated with the dung of large grazing mammals. Personal observation suggests that *nobilis* individuals are commonly encountered perching on top of accumulations of dung of the kind produced by cattle, buffalo and rhino. While Bernon (1981) did observe *nobilis* utilising dung as an oviposition medium, these flies have never been seen associated with the pellet-like dung produced by many African antelope; the inference is that they prefer dung with a high water content, and the reason for this may be that the larvae develop within it. Bernon (1981) lists elephant dung as being utilised by *nobilis*, and it would not surprise me if hippo dung was not also suitable.

An interesting case of a possible translocation and range extension has been brought to my attention by Dr Eric Fisher (pers. comm.), who wrote the following account [additional information provided in square brackets] in an as yet unpublished study on the Asilidae of Central America—'Two specimens of the common, widespread southern African Laphystiinae species *Hoplistomerus nobilis* Loew are present in the INBio collection [Costa Rican National Collection]. They are from a single locality [Estacion Petilla] in the northeastern Guanacaste Prov., Costa Rica, and were collected more than 10 years ago (no additional finds have been made since). A farm that raised ostriches (*Struthio camelus*) was once located nearby the collection site, and it seems possible that this may have led to an accidental introduction of this strictly Old World fly species—possibly through transfer of contaminated soil (M. Zumbado, pers. comm.). I am unaware of other New World records for this genus or species.' While it is highly unlikely that *nobilis* is now established in Costa Rica, the possibility that specimens may have been transported from southern Africa to South America raises another interesting problem. We know that these flies are commonly found in association with the dung of domesticated animals (i.e. cattle) where adults are commonly found feeding on dung beetles attracted to this food supply. While we do not know the reproductive biology of the species, females may utilise dung as an oviposition medium and the larvae may utilise beetle larvae as a food source. As cattle have long been translocated by cattle breeders, these flies might owe a great deal of their success to human activity. In addition, the few isolated and seemingly unlikely records here published for the Western Cape Province of South Africa may represent translocations.

Londt (2006) discussed the prey preferences of *Hoplistomerus* in general terms. The Natal Museum has a number of prey records for *H. nobilis* and these are listed in full below (number and sex of asilids, locality, prey identification (Scarabaeidae unless otherwise stated), length of prey specimen(s) with mean in brackets):

7♂ 6♀ Boekenhoutskloof, (Aphodiinae) *Neocolobopterus maculicollis* (Reiche, 1847). 6.8–9.0 (7.9) mm.
1♀ Boekenhoutskloof, (Scarabaeinae) *Euoniticellus intermedius* (Reiche, 1848). 9.5 mm.
1♂ Boekenhoutskloof, (Scarabaeinae) *Onthophagus aeruginosus* Roth, 1851. 6.7 mm.
1♂ Boekenhoutskloof, (Scarabaeinae) *Onthophagus pallidipennis* Fahraeus, 1857. 6.7 mm.
1♂ Boekenhoutskloof, (Scarabaeinae) *Drepanocerus laticollis* Fahraeus, 1857. 5.1 mm.
1♀ Boekenhoutskloof, (Scarabaeinae) *Sphaeridium caffrum* Castelnau, 1840. 4.3 mm.
1♀ Boekenhoutskloof, Diptera (Calliphoridae). 8.8 mm.
1♂ Roaring Sands Resort, (Scarabaeinae) *Onthophagus signatus* Fahraeus, 1857. 3.2 mm.
2♀ Mhlopeni Nat. Res., (Scarabaeinae) *Onthophagus lamelliger* Gerstaecker, 1871, 4.4–5.0 (4.7) mm.

Of the 22 records above, 21 (95%) relate to the Scarabaeidae, strongly indicating that *H. nobilis* is a specialist dung beetle feeder. While eight species of beetle are represented in the sample, 13 (62%) of these were specimens of *Neocolobopterus maculicollis*. Although this fact is unlikely to be of special importance, the size range of prey is probably significant. Prey items ranged in size from 3.2 to 9.5 mm in length, the mean being 6.3 mm, and so *nobilis* feeds on relatively small beetles.

Bernon (1981) studied the biology of *nobilis* and especially predator–prey interactions. Unfortunately, his findings have never been formally published. As his prey data are of considerable interest and value, I reproduce them here (Table 2) to make the data more readily available. While I can confirm a number of Bernon's records as he donated some material to the Natal Museum (those from Boekenhoutskloof listed above), I have not seen his other material. Table 2 shows that Bernon (1981) recorded 150 (actually 149) individual prey items for *nobilis*. Of these, 144 (97%) were Coleoptera, and of these 135 (93%) were Scarabaeidae. Twenty-six species of Scarabaeidae were recorded, representing nine different genera. Two species, *Colobopterus* (now *Neocolobopterus*) *maculicollis* (48) and *Drepanocerus laticollis* (20) accounted for 50.3% of the scarab records. While Bernon (1981) demonstrated that *nobilis* will feed on flies, bugs and wasps, his statistics leave little doubt about their predilection for beetles, and especially dung beetles.

Hoplistomerus oldroydi sp. n.

Figs 3, 24–26

Etymology: Named after Harold Oldroyd in recognition of his significant contribution to our knowledge of the genus.

Description: Based on unique ♂ holotype. The specimen is in good condition although both mesothoracic legs are damaged (right is entirely missing, left is broken off beyond femur) and some macrosetae are missing (sockets are evident).

Head: Dark red-brown to black, silver pruinose, pale yellow-white setose. Antenna: Dark red-brown, dull silver-gold pruinose, scape and pedicel pale yellow-white setose, postpedicel with a few small setae anterodorsally. Proportions of segments 1.0:1.0:2.7 (i.e. scape and pedicel of equal length, postpedicel more than two and a half times as long as scape). Style highly reduced to a pit-enclosed spine (sensory element). Face dark red-brown, silver pruinose, plane in profile, pale yellow-white setose. Mystax covers most of face, ventral setae being longest (especially along epistomal margin). Eye slightly wider than face in anterior view (face:eye width ratio 1.00:1.14). Frons and vertex similar to face, ocellar tubercle not very prominent and with a pair of ocellar macrosetae. Occiput dark red-brown, silver pruinose, pale yellow-white setose (a row of strong macrosetae dorsally behind eye margin). Two-segmented palpi and straight proboscis dark red-brown, pale yellow-white setose (orange at tip of proboscis).

Thorax: Dark red-brown to black, gold and silver pruinose, pale yellow-white setose. Mesonotum dark red-brown to black, fine gold pruinose centrally, strongly silver pruinose laterally. Postpronotal lobes extensively shiny apruinose. Macrosetae (pale yellow): acrostichals and dorsocentrals absent, 1 or 2 notopleurals, 7 supra-alars, 4 postalars. Scutellum dark red-brown to black, gold-silver pruinose, asetose, lacking transverse suture at midlength. Pleura dark red-brown, gold-silver pruinose, pale yellow-white setose. Anepisternum without macrosetae on posterior margin. Anepisternum shiny apruinose anteroventrally, anepimeron and katepisternum with irregular apruinose areas (possibly partly a result of abrasion). Katatergite with approx. 15 long, moderately developed setae. Prosternum dark red-brown, silver pruinose, asetose. Legs: Coxae dark red-brown, silver pruinose, pale yellow-white setose. Trochanters, femora, tibiae and tarsi red-brown, femora and metathoracic trochanters dark red-brown (metathoracic femora not as extensively dark red-brown as others). Major setae pale yellow, minute setae white. Metatibial spur small. All femora with poorly developed ventral tubercles. Wings: 6.7×2.4 mm (length from tip to humeral cross-vein, width at widest level). Venation as in Fig. 3, C extending around wing margin to CuA2+A1 (i.e. anal cell and alula lacking bordering vein). Veins dark red-brown and brown-orange. Membrane weakly stained and extensively microtrichose.

Abdomen: Dark red-brown to black. Terga with narrow orange posterior margins, apruinose, with 2 or 3 yellow discal macrosetae (T1 has 5), covered with fine pale yellow-white setulae. Sterna uniformly dark red-brown, fine dull brown pruinose, sparsely long setose. Genitalia as in Figs 24–26. Female unknown.

Holotype: KENYA: 1♂ Kanyamkago [or Kamjamkago], S. Kavirondo [Gulf, 00°22'S:34°16E], 25.v.91, Pugh J. (ZSMC).

Distribution and biology: Known only from the type locality and collected only in May (Table 1).

Hoplistomerus pegos sp. n.

Figs 4, 27–29

Hoplistomerus erythropus: Oldroyd 1940: 313–314 (fig. 5d ♂ clasper); 1970: 246 (fig. 26 ♂ genitalia).

Etymology: Greek *pegos* (strong, solid). Refers to the well-developed metathoracic femora.

Description: Based mainly on holotype. The specimen is in good condition, although the right mesothoracic leg is broken off beyond trochanter.

Head: Dark red-brown, silver-gold pruinose, shiny yellow setose. Antenna: Orange, dull silver-gold pruinose, scape and pedicel yellow setose, postpedicel with a few small setae anterodorsally. Proportions of segments 1.0:1.0:3.5 (i.e. scape and pedicel of equal length, postpedicel 3.5 times as long as scape). Style highly reduced to a pit-enclosed spine (sensory element). Face red-brown, silver-gold pruinose, plane in profile, shiny yellow setose. Mystax covers most of face, ventral setae being longest (especially along epistomal margin). Eye and face of equal width in anterior view (face:eye width ratio 1.0:1.0). Frons and vertex similar to face, ocellar tubercle not very prominent and with a pair of ocellar macrosetae. Occiput dark red-brown, silver-gold pruinose, yellow setose (a row of strong macrosetae dorsally behind eye margin). Two-segmented palpi and straight proboscis red-brown (base orange-brown medially), yellow setose.

Thorax: Dark red-brown with red-brown areas, silver-gold pruinose, yellow setose. Mesonotum dark red-brown with red-brown areas (postpronotal lobe and surrounds, and postalar calli), fine gold pruinose centrally, strongly silver pruinose laterally. Postpronotal lobes extensively shiny apruinose. Macrosetae (pale yellow): acrostichals, dorsocentrals and notopleurals absent, approx. 6 supra-alars (obscured by minor setae), 3 postalars. Scutellum dark red-brown, gold pruinose, lacking marginal macrosetae, with transverse suture at midlength. Pleura dark red-brown, silver-gold pruinose, pale yellow setose. Anepisternum without macrosetae on posterior margin. Anepisternum and katepisternum largely shiny apruinose. Katatergite with approx. 15 long, moderately developed setae. Prosternum red-brown, gold-silver pruinose, asetose. Legs: Brown-yellow, coxae slightly darker and silver pruinose. Major setae pale yellow, minute setae white. Metatibial spur moderately developed. All femora well-developed and with weak to strongly developed ventral tubercles. Wings: 7.6×2.9 mm (length from tip to humeral cross-vein, width at widest level). Venation as in Fig. 4 (paratype), C extending around wing margin to CuA2+A1 (i.e. anal cell and alula lacking bordering vein). Veins red-brown and orange. Membrane weakly stained and extensively microtrichose.

Abdomen: Red-brown and brown-yellow banded. Terga red-brown with broad brown-yellow posterior margins, largely apruinose, with 1–4 yellow discal macrosetae (T1 has 4, others fewer), covered with fine golden yellow setulae. Sterna uniformly red-brown, apruinose, sparsely short setose. ♂ genitalia as in Figs 27–29. Female similar to male.

Holotype: 1♂ SOMALIA: Bohotle [08°15'N:46°20'E], 1903, Appleton AF (BMNH).

Paratypes: 2♂ 1♀ same data as holotype; 1♂ 1♀ Ado (Vadere) [Ada, 09°55'N:43°47'E], 24.xi.1953, Desert Locust Survey (BMNH).

Notes: In general appearance the species is like *erythropus*, but a little larger and with metathoracic femora slightly more robust, especially in the female. The male terminalia appear most closely similar to those of *caliginosus*.

Distribution and biology: Known from only two localities in Somalia and collected in November (Table 1).

Hoplistomerus quintillus Oldroyd, 1940

Figs 30–32

Hoplistomerus quintillus: Oldroyd 1940: 317 (fig. 5e ♂ clasper); 1980: 350 (catalogue); Hull 1962: 96.

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.9:3.7 (i.e. scape and pedicel approximately equal; postpedicel more than three and a half times length of scape). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur large. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a narrow posterior strip. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur dark red-brown (tips may be paler). *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 30–32.

Type specimens studied (all BMNH): KENYA: 2♂ **paratypes**, 'Brit. E. Afr. / Mara R. / Masai Res. [Masai Mara Res., 01°26'S:34°55'E], 11.ii.1914 / Capt. A. O. Luckman.', 'Paratype / *Hoplistomerus* ♂ *quintillus* Oldr. / det. H. Oldroyd 1940'; 1♂ 1♀ **paratypes**, 'Brit. E. Africa. / Mogorr R. [Mogorro = Migori, 00°59'S:34°15'E] / May 1913. / A. O. Luckman.'; 1♀ **paratype**, 'Brit. E. Africa. / Narok. [01°05'S:35°52'E] / 1.4.14. 5,600 ft. / A. O. Luckman.'

Notes: I have not seen all the type specimens. Those listed by Oldroyd (1940), but not included in the material sent for study, were (as listed by Oldroyd): '*Type* ♂ BRITISH EAST AFRICA [KENYA]: Kenyamkago [?], Kisumu [Populated place, 00°06'S:34°45'E] Province (*Dr, J. Pugh*). *Paratypes* BRITISH EAST AFRICA: 2♂ Kaja [Stream, 00°01'S:37°48'E] Valley, S. Kavirondo [Bay, 00°15'S:34°35'E], 4000 ft., 31.iv.-1.v.1911 (*S. A. Neave*)'.

Distribution and biology: Known only from the type series, all from Kenya. Specimens were collected in February, April and May (Table 1).

Hoplistomerus serripes (Fabricius, 1805)

Figs 33–36, 41

Laphria serripes: Fabricius 1805: 159.
Laphria maculipennis Macquart, 1834: 285.
Hoplistomerus serripes: Macquart 1838: 60; 1839: 176; Oldroyd 1940: 312–313 (figs 5a–b ♂ claspers); 1980: 350 (catalogue); Hull 1962: 96 (figs 437 wing, 880 & 889 head).
Hoplistomera serripes: Loew 1958: 356; 1860: 118–119.
Hoplistomera auriventris Loew, 1858: 356; 1860: 119–120; Hull 1962: 96.
Hoplistomerus auriventris: Engel 1928: 250.
  ssp. *auriventris* Hull, 1962: 96; Oldroyd 1980: 350 (catalogue).
  ssp. *serripes* [by inference]: Oldroyd 1980: 350 (catalogue).

Diagnosis: Size: Large (wing length from humeral cross-vein to tip >11 mm). *Head*: Eye narrower than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:0.7:3.1 (i.e. scape clearly longer than pedicel; postpedicel more than three times length of scape). *Thorax*: Presutural macroseta(e) present. Anepisternal macroseta present. Prosternal ventromedial setation long. Male metatibial spur small. Scutellum lacking a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a fairly broad posterior strip. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur dark red-brown (tips may be paler). *Abdomen*: T3 setulae golden (those in eastern part of distribution with longish white setulae laterally, or all setulae longish white). ♂ genitalia as in Figs 33–36.

Type specimens studied: GUINEA: 1? [probably ♂] **lectotype** [*serripes*], '*L. serripes* / Guinea Meien [?]' [cream, hand written] (UZMD). Condition: Fair. Left antenna broken off beyond scape, right broken off beyond pedicel. Left metathoracic tarsus broken off beyond fourth tarsomere, right entirely missing. Postmetacoxan area and most of sterna 1–3 missing (dermestic damage). Genital bulb missing (terminal parts suggestive of the ♂ condition). 1♂ **paralectotype** [*serripes*], 'Type' [red, printed] (UZMD). Condition fair, but specimen lacks its head. 1♂ 1♀ **syntypes** [*auriventris*], SUDAN: 'Chartum [Khartoum, 15°35'N:32°32'E] / Vierthaler' [blue, handwritten], '*auriventris*' [white, handwritten], '10137' [white, printed], 'Coll. / H. Loew' [white, printed], 'Typus' [red, printed], 'Zool. Mus. / Berlin' [white, printed] (ZMHB). ♀ has similar labels to ♂ but lacks the second and third labels, and has an additional tiny violet label without writing. Condition: Good. Both specimens are complete.

Notes: Fabricius (1805) provided a short Latin description of unlisted material from 'Habitat in Guinea Muf. Dom. de Seheftedt.' There are two specimens bearing 'Type' labels and these must be considered syntypes. The specimen lacking genitalia is here designated as lectotype, while the ♂ lacking head is considered a paralectotype. Loew's (1958) brief description of *auriventris* was based on '♂ & ♀' from 'Chartum. (Vierthaler)' and did not include the designation of a holotype. As this is a well-established synonym I do not believe the designation of a lectotype is necessary.

Macquart's (1834) short description of *maculipennis* suggests that he studied at least one male specimen. Although he states 'Du Sénégal; cabinet de M. Percheron', I have not been able to ascertain with any certainty where the material is housed. The MNHN does not hold the material and so it may be at the museum in Lille, France, but I have not been able to establish this for certain. This long-established synonym is, however, almost certainly correct and has been accepted as such.

Other specimens studied: CHAD: 1♀ Mara-Goulfez, NE de Fort Archambault [09°05'N:18°23'E], ix.1904, Decorse (MNHN); 2♂ Tchad orient., Archipel Kouri [09°54'N:17°40'E], 1904, Chevalier (MNHN); 2♂ 1♀ Baguirmi, Tcheckna [Tchekna, 11°24'N:16°10'E], viii.1904, Chevalier (MNHN); 4♂ 1♀ Bas Chari, Fort Lamy [12°04'N:15°08'E], x.1904, Decorse (MNHN); 1♂ Bas Chari, Fort Lamy, viii.1904, Decorse (MNHN); 1♀ Guéra Mongo [12°14'N:18°43'E], viii.1992, Mahadjir; 2♂ Djimlilo [Djimtilo, 12°30'N:14°35'E], viii.1908, Gailland (MNHN, MCMI);1♀ Betha Ati [13°13'N:18°20'E], viii.1992, Mahadjir; 2♀ Kanem Distr., N'Gouri [19°00'N:19°00'E], x–xi.1958, Renaud (MRAC). DR CONGO: 1♀ Moyen [Province, 02°00'N:20°00'E], vii viii ix.1907 (MNHN); 1♀ Kibali-Ituri, Mahagi Port [02°09'N:31°14'E], 23.vii.1931, Scops (MRAC); 1♀ Mahagi Port, ix.1934, Brédo HJ (MRAC). ETHIOPIA: 1♂ Addis Abbaba [Addis Ababa = Adis Abeba, 09°02'N:38°42'E], 1.vii.1920 (NMNH); 1♂ 1♀ Abyssinie [? locality], 1854 (MNHN). THE GAMBIA: 1♂ Kiang West N.P. Headquarter [13°23'N:15°55'W], 6.xi.1998, Schacht (ZSMC); 1♀ Gambia [no locality] (NHMW); 3♂ 2♀ Gambia (OXUM). GHANA: 1♂ Keta [05°49N:01°00'E], 10.xi.1951, Bowden; 1♂ Zuorungu [Zuorugu, 09°21'N:00°53'W], i.vii.1949, Bowden. GUINEA: 2♀ Guinea [? locality], Mus. Stieg (UZMD); 2♂ Guinea, Mus. Western (UZMD); 1♂ 1♀ Guinea [no locality] (NHMW). KENYA: 1♂ Nairobi [01°16'S:36°46'E], 15.xii.1951, Edwards (BMNH); 1♂ Kibwezi W. F [Kibwezi Forest, 02°26'S:37°55'E], xii.1929, Van Someren (BMNH ♂ NMNH); 1♀ Rabai [03°55'S:39°33'E], vii.1928, Van Someren (NMNH); 1♀ Mombasa [04°02'S:39°40'E], 12–13.xi.1935, Zerny (NHMW); 1♀ Mombasa, 24.vi.1927 (NMNH); 1♀ Mtwapa Creek, Mombasa, x.1951. Pinhey (BMNH); 1♀ 1? Muhaka Forest S of Mombasa, 04°14'S:39°25'E, 19.x.1992, Abu-Zinid. MALI: 1♂ Soudan Franç, Région de la Volta, Sikasso [11°19N 05°40'W] – Bobo-Dioulassou [Bobo Dioulasso, 11°11'N:04°18'W (plotted as approximately halfway between these two places i.e. 11°15'N:05°05'W)], 1900, Chevalier (MNHN); 1♀ Soudan Fr. Koulikoro [12°53'N:07°33'W], 1900, Chevalier (MNHN); 1♀ Kogoni [Kogonè, 13°42'N:02°53'E], 15.x.1957, Pointel (MNHN); 1♂ 1♀ Koulikoro [Koulikoïré, 13°52'N:01°29'E], Linarix (MNHN); 1♀ Soudan Franç, Yélimané [Yélouané = Yéléouani, 14°11'N:01°26'E] Au N de Kayes, 1907, de Zeltner (MNHN); 1♂ Soudan Franç, Niafunké [Niafounké, 15°56'N:04°00'W], viii–ix.1909, de Zeltner (MNHN); 1♂ 1♀ 5^{e} U. Mocodo [or U. Mocogo, ?], 25.ix.1956, Pointel (MNHN). MAURITANIA: 1♂ Near Nema [16°37'N:07°15'W], 20.viii.1961, Popov (BMNH); 1♂ Trarza [Distr.], Mederdra [16°55N:15°39'W], vii–viii.1908, Mére (MNHN). NIGER: 2♀ Gaya [11°52'N:03°28'E], viii.1975, Popov (BMNH); 1♂ 3♀ Sultanat du Damaghérim, Dungass [Dungas, 13°04'N:09°20'E], viii–x.1910, Gaillard (Mission Tilho) (MNHN); 1♂ De Maradi, a Dungas, viii.1910, Gaillard (Mission Tilho) (MNHN); 4♂ 3♀ Maradi, vii.1910, Gaillard, (Mission Tilho) (MNHN); 4♂ 5♀ 1? Tibiri-Maradi [13°35'N:08°10'E], vii–viii.1910, Gaillard (Mission Tilho) (MNHN); 1♂ Boucle du Niger, Au N du 14° de Lat., Douentza (Dounzou) [Dounsou = Doulsou, 14°45'N:00°53'E], 1907, Decorse (MNHN);

1♀ Nr Dosso [Dourso, 15°16'N:13°53'E], vii.1975, Popov (BMNH). NIGERIA: 1♀ Near Gombe, Zambuk [10°19'N:11°21'E], 18–21.ix.1970, Popov (BMNH); 1♂ Kafinsoli [Kafin Soli, 12°31'N:07°44'E], 15.ix.1951, JB [Bowden]. SENEGAL: 1♀ Boal [Tobor Boal, 12°40'N:16°16'W] orientae, Diarhta (MNHN); 1♀ Badi [13°09'N:13°14'W], 15.viii–25.ix.1955, Mission IFAN an Parc National du Niokolo Koba (MNHN); 2♀ Ht Sénégal Niger, Yelimané, Cercle de Nioro [13°40'N:15°50'W], vi.1918, Chudeau (MNHN); 1♂ Terres-Neuves, Mereto [13°49'N:14°27'W], 28.x.1976, Couturier (MNHN); 1♂ 1♀ Koumpenntoum [13°59'N:14°34'W], 29.viii.1967, Pointel (MNHN); 1♂ Nianing [14°21'N:16°56'W], ix.1978, Sauer (ZSMC); 1♂ M'Bour [Mbour, 14°24'N:16°58'W], 17.ix.1980, Sigwalt (MNHN); 1♂ 1? M'Bour, 31.viii.1979, Sigwalt (MNHN); 1♂ 1♀ Kayes [14°25'N:11°30'W], 1905, de Zeltner (MNHN); 2♂ Barkedji [14°35'N:14°49'W], 12.ix.1967, Descarpentries Leye & Villiers (MNHN); 1♂ 1♀ Forêt de Bandia [14°35'N:16°58'W], 22.ix.1976, Couturier (MNHN); 1? Forêt de Bandia, 4.xi.1975, Couturier (MNHN); 2♂ Dakar [14°40'S:17°26'W], 20.viii.1976, Couturier (MNHN); 1♀ Niayes Dakar, (MNHN); 1♂ Dakar, 1907, Waterlot (MNHN); 1♀ Dakar, 1906, Melon (MNHN); 1♀ Dakar, Bel Air, 28.vii.1980, Sigwalt (MNHN); 1♀ Dakar, Bel Air, 14.viii.1980, Sigwalt (MNHN); 2? Ht Sénégal-Niger, Tengué (Cercle de Nara) [Teungué, 14°41'N:16°13'W], ix.1918, Chudeau (MNHN); 1♂ Bambey [14°42'N:16°28'W], 1958, Amadou (MNHN); 1♂ Bambey 14th enclose, 13.x.1966, Chenon (MNHN); 2♂ Africa occ., Thies [14°48'N:16°56'W], 1912 (MCMI); 1♂ Mèdine [14°52'N:17°02'W] (MNHN); 2♂ Bakel [14°54'N:12°27'W], 14.ix.1907, Neveu (MNHN); 43♂ 17♀ Linguère [15°24'N:15°07'W], ix.1967, Descarpentries Leye & Villiers (MNHN); 1♂ 4♀ Saint Louis [16°08'N:16°27'W], xii.1896, Delestre (MNHN); 2♀ St Louis, 1869, Steindachner (NHMW); 1♀ Dagana [?], 1870, Steind. (NHMW); 1♀ [no locality] 1910, Dongé (MNHN); 1♂ Senegal [no locality] (NHMW); 5♂ 3♀ Seneg [Senegal] (OXUM); 1♂ Haut Senegal [northern part] (MCMI); SOMALIA: 1♂ Baidoa [03°04'N:43°48'E], 22.xi.1983, Abdurahnan; 1♀ Baidoa, 16.xi.1983, Lavigne; 1♂ Baidoa, 10.xi.1953, Desert Locust Survey (BMNH); 1♂ El Rago [06°38'N:45°47'E], 8.xii.1953, Desert Locust Survey (BMNH); 1♀ It. Mer. [?], vi.1925, Abruzz (MZUF); 1♀ It. Mer., vi.1926, Abruzzi (MZUF). SUDAN: 1♂ Manno [Mango, 10°16'N:25°53'E], 1873 (NHMW); 1♂ Kordofan [Province, 13°00'N:29°00'E], (NHMW); 1♂ 1♀ Kartoum [Khartoum, 15°35'N:32°32'E] (OXUM); 1♂ Hudeiba, Ed Damer [17°27'N:34°00'E], 18.xi.1961, Remane (ZSMC); 2♂ 1♀ Marno [or Mario], Nubien [Nubian Desert, 21°30'N:33°30'E], 1871 (NHMW); 1♀ Sudan [? locality], 1881, Errun-Lado [? locality or collector] (NHMW). TANZANIA: 1♂ Gonja [04°16'S:38°03'E], v.1958, Phipps (BMNH); 1♀ Usambara [Mountains, 04°55'S:38°20'E], ii–iii.86, Schmidt (ZMHB). UGANDA: 1♂ 1♀ E Lac Albert, Butiaba [01°50'N:31°20'E], 20.ix.1937, Brédo (MRAC). UNKNOWN COUNTRY: 1♀ Afr. Occid. (MNHN); 1♂ 2♀ no labels (OXUM).

Notes: Oldroyd (1940) regarded *auriventris* 'as a form of *serripes*' but later (1980) listed it as a subspecies. There is now no doubt that *auriventris* is a synonym of *serripes*. The analysis of variation (below) shows clinal variation that makes acceptance of subspecies and forms no longer admissible. The caption of Hull's (1962) fig. 889 (head in anterior view) merely reads '*Hoplistomera* sp.'. However, there is little doubt that he depicted *serripes*, as the face is clearly wider than the eye (a feature of this species) and his anterior view of a head is specifically identified as being that of *serripes*.

Analysis of variation:

Individual variation: Based on a fairly large sample of 43♂ 17♀ from Linguère (Senegal) the following variation in size and coloration within a single localised population has been established.

Size: Based on wing length measured from humeral cross-vein to tip: range 11.1–15.5 mm (mean 13.3 mm). Females (12.0–15.1 mm, mean 13.6 mm) were on average slightly larger than males (11.1–15.5 mm, mean 13.1 mm).

Coloration: Based on the colour of abdominal T3 setation. All golden except for one female specimen with a few white setae laterally.

Geographocal variation: A large sample (138), including most of the specimens listed above, was examined from countries across the African continent—Chad (17), DR Congo (2), Ethiopia (2), The Gambia (2), Ghana (2), Guinea (8), Kenya (5), Mali (11), Mauritania (2), Niger (27), Nigeria (2), Senegal (39), Somalia (6), Sudan (7), Tanzania (2), Uganda (2), unknown (2)—in respect of the colour of abdominal tergal setation. The vast majority possessed golden setae (111 or 80%); there were some with a mixture (various degrees) of gold and white setae (20 or 14%), and a few possessed entirely white setae (4 or 3%). Those with entirely white setae were all from Somalia. Those possessing a mixture of gold and white setae were from the following countries (the number and percentage of specimens from that country are indicated)—Ethiopia (2 or 100%), Tanzania (2 or 100%), Kenya (4 or 80%), Sudan (5 or 71%), DR Congo (1 or 50%), Somalia (2 or 33%), Mali (1 or 9%), Senegal (3 or 8%). These figures show that while most specimens have entirely golden setose tergites, the incidence of white setae increases as one moves from the extreme west of the continent (i.e. Senegal) to the extreme east (i.e. Somalia), where all specimens have some white setae and some are entirely white setose. While detailed analysis has not been undertaken, it is interesting to note that specimens possessing white setae tend to have longer tergal setae and individuals also tend to be larger. Oldroyd (1940) used this size difference to key *auriventris* from more typical *serripes*.

One of the main characters used to differentiate *auriventris* from *serripes* has been setal colour. As it has now been shown that this character demonstrates clinal variation, it is impossible to define reliably identifiable subspecies or 'forms' within the species.

Distribution and biology: The species is distributed right across the African continent from Senegal in the west to Somalia in the east (Fig. 41), the distribution agreeing well with the occurrence of grassy biomes. While there are a few records from regions associated with equatorial forest, these may represent grassland localities adjacent to forests or range extensions caused by deforestation. Interestingly, the most south-eastern record coincides with the most north-eastern records of *nobilis*, and these species may even be sympatric in the vicinity of Mombasa. *H. serripes* has been collected almost throughout the year (no records for January, February and April) and is most common during northern hemisphere summers (the single March record is from south of the equator in Tanzania).

Only two prey records are available to me. A specimen lacking terminalia from Muhaka Forest, south of Mombasa (Kenya), has been pinned with a 10.2 mm long scarab beetle, *Allogymnopleurus umbrinus* (Gerstaecker, 1871), while a male from Zuarunga (Ghana), has a smaller (6.0 mm long) scarab beetle (*Neocolobopterus maculicollis* Reiche, 1847) associated with it. These records suggest that the feeding habits of *serripes* are similar to those of *nobilis*.

Hoplistomerus zelimina Speiser, 1910

Figs 37–39, 43

Hoplistomera zelimina: Speiser 1910: 92–93.
Hoplistomerus zelimina: Oldroyd 1940: 315 (fig. 5g ♂ clasper); 1980: 350 (catalogue); Hull 1962: 96.

Diagnosis: Size: Moderate (wing length from humeral cross-vein to tip 8–11 mm). *Head*: Eye wider than face (in anterior view measured at level of greatest head width). Relative proportions of antennal segments (scape, pedicel and postpedicel) 1.0:1.0:3.5 (i.e. scape and pedicel approximately equal; postpedicel more than three times length of scape). *Thorax*: Presutural macroseta(e) absent. Anepisternal macroseta absent. Prosternal ventromedial setation short to absent. Male metatibial spur large. Scutellum with a transverse groove at mid-length. Wing cell m_3 with microtrichia limited to a narrow posterior strip. Prothoracic coxa and prosternum both dark red-brown. Prothoracic femur orange ventrally, dark red-brown dorsally (it should be noted that while the dark red-brown and yellow metathoracic femur of many individuals is a useful identification tool, there is considerable variation with some specimens possessing entirely yellow metathoracic femora). *Abdomen*: T3 setulae white laterally, golden medially. ♂ genitalia as in Figs 37–39.

Type specimens studied: TANZANIA: 1♂ **holotype**, 'Kilimandjaro [03°07'S:37°20'E / Sjöstedt. 1906–6', 'Obstgarten- / Steppe', '24 Mars', 'Hoplistomera / zelimina M. / P. Speiser det. / Type!' [white] (NHRS).

Other specimens studied: ETHIOPIA: 1♂ 1♀ Konso Prov. Gamu Gofa, 37°23'E:5°16'N [reversed coordinates], 6.iv.1960, Richter, 1610 m (SMNS); 1♂ 2♀ Riv. Errer [09°59'N:41°19'E], Kristensen (BMNH). KENYA: 1♀ Baringo Lake Bogoria Nat. Res. South end, 00°11'N:36°08'E, 21.xi.1992, Londt & Whittington, Fig Tree camp site; 11♂ 4♀ Uaso Nyiro R., Archer's Post [00°39'N:37°41'E], 6.xii [7♂ 2♀], 12.xii.1969 [4♂ 2♀], Irwin & Ross, 2300 ft (CASC); 1♀ Samburu Game Res. [00°40'N:37°32'E], 19.i.1983, Valdenberg; 1♀ Samburu Buffalo Springs, 15–18.vii.1987, Feijen; 2♂ 2♀ West Pokot Marich Field Centre, 01°33'N:35°28'E, 22.xi.1992, Londt & Whittington, 1000 m, closed *Acacia* woodland; 1♂ 1♀ Stony Athi [01°35'S:37°00'E], v.1940, E.A.U. Nat. Hist. Soc. Biol. Survey (NMNH); 2♂ 2♀ Nguruma, Kajiado dist., 01°50'S:36°56'E, i.1990 (1♂ 1♀) v.1990, Abu-Zinid, 700 m, Rift Valley alluvial plains; 1♂ W side Turkwell Valley [01°55'N:35°20'E], 1.v.1954 (BMNH); 1♀ Kajiado Kiboko R. 2 km W of Hunter's Lodge, 02°11'S:37°41'E, 30.xi.1992, Londt & Whittington, 960 m, *A. xanthophloea* forest; 1♂ 2♀ near Kajiado, 14.v.1968, Greathead (BMNH); 1♂ 1♀ Kibwezi W. F [Kibwezi Forest 02°26'S:37°55'E], ii.1929, Van-Someren (BMNH ♂ NMNH); 1♂ 2♀ Mombasa [04°02'S:39°40'E], 18–27.v.1978, Riedel (ZSMC); 1♂ Watamu Mombasa, 27.iv.1940, Jeffery (NMNH); 1♀ Brit. E Africa, 1894, Gregory (BMNH). TANZANIA: 2♂ 4♀ Ngaruka [Nguruma 01°50'S:36°56'E], 29.i–14.ii.1952, D. O. Afrika Exp. (SMNS); 1♂ 1♀ Masai distr., Longido [02°44'S:36°39'E], 19.iv.1957, Basilewsky & Leleup (MRAC); 2♂ Mbugve [Mbugwe 03°16'S:31°18'E], 22–30.iii.1959, Lindner (SMNS); 1♀ Momela, Arusha [Populated place, 03°20'S:36°40'E] Nat. Park, 21.i.1970, Irwin & Ross, 5000 ft (CASC); 1♀ Ndala R., Manyara [Lake, 03°30'S:36°00'E] Nat. Park, 21.i.1970, Irwin & Ross, 2300 ft (CASC). SOMALIA: 2♀ Borama [00°35'N:43°11'E], 6.vi.1957, Roffey (BMNH). UNKNOWN COUNTRY: 1♀ 69 (BMNH); 1♂ Burma: Coll. & Pres. E.Y. Watson B.M. 1894–4 (BMNH).

Distribution and biology: An East African species most commonly recorded from Kenya, but ranging from southern Ethiopia in the north to northern Tanzania in the south (Fig. 43). As noted by Oldroyd (1940), the specimen labelled as having been collected in Burma is certainly mislabelled. The species has been collected during every month from November through to May. In discussing the occurrence of *Hoplistomerus* in the Congo Basin, Oldroyd (1970) established that the species inhabits savannah.

TABLE 1

The phenology of *Hoplistomerus* species. Open circles represent unverified data.

Species	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
caliginosus	–	–	–	–	–	–	–	–	●	–	–	–
engeli	–	–	–	–	●	–	–	–	–	–	–	●
erythropus	●	–	–	–	●	●	–	–	–	○	○	–
garambensis	–	–	–	–	●	–	–	–	–	●	●	–
miniatus	●	○	–	–	–	–	–	–	●	●	●	○
nobilis	–	–	●	●	●	●	●	●	●	●	●	●
oldroydi	–	–	–	–	–	–	–	–	–	–	●	–
pegos	–	–	–	–	●	–	–	–	–	–	–	–
quintillus	–	–	–	–	–	–	–	●	–	●	●	–
serripes	●	●	●	●	●	●	–	–	●	–	●	●
zelimina	●	–	–	–	●	●	●	●	●	●	●	–
Total	**4**	**2**	**2**	**2**	**7**	**4**	**2**	**3**	**5**	**6**	**8**	**4**

Records of Hoplistomerus *in the American Museum of Natural History (AMNH)*

The following list of specimens was kindly supplied by Dr Torsten Dikow and adds further to the known distributions of species. Of particular interest is the *garambensis* record as the species is otherwise only known from the types.

H. garambensis: DR CONGO: 1♀ Faradje, 3°40'N:29°40'E, ii.1911, Lang & Chaplin.

H. nobilis: BOTSWANA: 1♂ Okavango Delta, Maun thorn woodland, 19°53'28.2"S:23°29'00.1"E, 8.ii.2002, Kipping. SOUTH AFRICA: 1♀ Natal [old specimen]; 2♀ Kroonstad, 19.xii.1966, Brothers.

H. serripes: THE GAMBIA: 1♂ 1♀ *c.* 11 km W Banjul, Bakau, Atlantikstrand-Bereich, 25.ix.1987, Barkemeyer; 1♂ 1♀ *c.* 29 km W Soma, Tendaba Wegesrand, 28.ix.1987, Barkemeyer; 1♀ *c.* 29 km W Soma, Tendaba–Kwinella, 1.x.1987, Barkemeyer. SENEGAL: 1♂ Ziguinchor, Ruderalfläche, 5.x.1987, Barkemeyer. UNKNOWN COUNTRY: 1♀ Africa [old specimen].

Additional records

The following specimens were encountered after text formatting had been finalised. Of particular interest is the *garambensis* paratype and the records of *serripes* from Ivory Coast and Tanzania. ISNB – Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium.

H. garambensis: DR CONGO: 1♂ **paratype**, 'Congo belge, G.N.P. / Miss. H. De Saeger / I/a/3, 17-iv-1950 / Réc. H. De Saeger. 422', 'Para- / type' [orange], '*Hoplistomerus* / *garambensis* Oldr / det. H. Oldroyd, 1965 / Paratype' [white] (ISNB).

H. nobilis: MALAWI: 1♂ Nyassa-See [= Lake Malawi], 19–30.iii.1898, Fülleborn (ZMHB); 1? same data but iv.1898 (ZMHB). MOZAMBIQUE: 2♀ Delagoabai [= Maputo], Monteiro (ZMHB). NAMIBIA: 1♀ Popa Cap, Kavango, 18°07'S:21°34'E, 28.ii–5.iii.1994, Schumann (ZMHB). SOUTH AFRICA: 1♂ 3♀ Hluhluwe Game Res., 28°55'S:32°05'E, 9–12.ii.1995, Koch (ZMHB); 3♂ Ndumu Game Reserve, 26°55'S:32°19'E, 2.ii.1995, Koch (ZMHB); 1♂ 1♀ Louwsburg, Itala Game Res., 10–23.xii.1992, Koch (ZMHB); 1♀ Mkuze River Camp, 3–4.ii.1994, Göllner (ZMHB).

H. serripes: IVORY COAST: 1♀ Bouaké, vi.1977, Elsen (MRAC). SENEGAL: 1♂ 2♀ Djourbel, viii.1979, Pauly (MRAC); 1♂ 1♀ same data but 22.vii.1979 (MRAC); 1♂ Tambacounda, 11.ix.1979, Pauly (MRAC). TANZANIA: 1v Usambara, ii–iii.1896, Schmidt (ZMHB).

Key to species of *Hoplistomerus*

1 Notopleural macroseta(e) present; transverse scutellar groove absent (or weakly developed anterior of mid-length) 2

– Notopleural macroseta absent; transverse scutellar groove present at mid-length 4

2 Face wider than eye in anterior view; prosternum with well-developed longish setae medially; microtrichia of cell m_3 as a broad band along posterior margin only; big flies (wing length >11 mm) usually with golden abdominal setae covering much of tergites (entirely white only in furthest eastern records); ♂ terminalia as in Figs 33–36; widely distributed across Africa, mainly north of the equator .... **serripes** (Fabricius, 1805)

– Face narrower than eye in anterior view; prosternum bare or with small weakly-developed setae medially; microtrichia of cell m_3 as a narrow band along posterior margin as well as a fairly extensive area posteroproximally; small to moderate sized flies (wing length <11 mm) with pale whitish setae covering abdominal terga 3

TABLE 2

Reproduction of Bernon's (1981) Table V headed
'Predator-Prey Capture Records for *Hoplistomerus nobilis* Loew.'

Prey Species		**No. of Captures**	**% of Total**
Coleoptera: Scarabaeidae			
1.	*Onthophagus aeruginosus* Roth	6	4.0
2.	*O. albipodex* D'Orbigny	1	0.7
3.	*O. cinctipennis* Quedenfeldt	3	2.0
4.	*O. flavolimbatus* Klug	3	2.0
5.	*O. pallidipennis* Fahraeus	9	6.0
6.	*O. pullus* Roth	4	2.7
7.	*O. signatus* Fahraeus	1	0.7
8.	*O. sugillatus* Klug[1]	4	2.7
9.	*O. variegates* Fahraeus	2	1.3
10.	*O. vinctus* Erichson	3	2.1
11.	*Proagoderus alcyon* Klug[2]	1	0.7
12.	*P. speculicollis* Qued.	1	0.7
13.	*Caccobius convexifrons* Raffray[3]	2	1.3
14.	*C. nigritulus* Klug	4	2.7
15.	*C. viridicollis* Fahraeus[3]	1	0.7
16.	*Tiniocellus spinipes* (Roth)	3	2.1
17.	*Euoniticellus intermedius* (Reiche)	8	5.7
18.	*E. triangulates* (Harold)	1	0.7
19.	*Drepanocerus kirbyi* (Kirby)	3	2.1
20.	*D. laticollis* Fahraeus	20	13.3
21.	*D. patrizii* (Boucomont)	1	0.7
22.	*Sisyphus caffer* Boheman	2	1.3
23.	*S. rubrus* Paschalidis[4]	1	0.7
24.	*Aphodius dimidiatus* Roth	1	0.7
25.	*A. humilis* Roth	1	0.7
26.	*Colobopterus maculicollis* Reiche	48	32.0
Coleoptera: Hydrophilidae			
27.	*Sphaeridium caffrum* Castl.	6	4.0
Coleoptera: Histeridae			
28.	*Abraeus curtulus* (Fahrs.)	1	0.7
Coleoptera: Staphylinidae			
29.	*Philonthus* sp.	2	1.3
Coleoptera: Curculionidae			
30.	Ceutorhynchinae sp.	1	0.7
Diptera: Calliphoridae			
31.	*Lucilia cuprina* Wd.	1	0.7
Diptera: Sepsidae			
32.	*Sepsis* sp.	1	0.7
Hemiptera: Pentatomidae			
33.	*Aeliomorpha simulans* Stål	1	0.7
Hemiptera: Coreidae			
34.	*Brotheolus viridis* Distant	1	0.7
Hymenoptera: Sphecidae			
35.	*Oxybelus lepturus* Arnold	1	0.7
		T = 150[5]	**100.0**

Note: In providing me with a copy of Bernon's thesis, Dr Adrian Davis (University of Pretoria) supplied the following notes pertaining to some changes in scarab nomenclature that have taken place since 1981.

[1] *O. sugillatus* is *O.* sp. nr *sugillatus* (it may be described but I do not have a name for the species).

[2] *Proagoderus alcyon* has been transferred into a new genus and should be *Hyalonthophagus alcyon* (Klug). It may have been a misidentified *H. alcedo* (d'Orbigny).

[3] *Caccobius convexifrons* and *C. viridicollis* have been transferred into the new genus *Cleptocaccobius*.

[4] The subgenera *Sisyphus* and *Neosisyphus* have been raised to generic status, and *S. rubrus* has become *Neosisyphus rubrus* (Paschalidis).

[5] Bernon's addition was incorrect, only 149 records are listed.

3 Anepisternal macroseta(e) present; postpedicel less than three times length of scape; ♂ terminalia as in Figs 8–10; Somalia and ? Kenya .... **engeli** Oldroyd, 1940

– Anepisternal macrosetae absent; postpedicel more than three times length of scape; ♂ terminalia as in Figs 24–26; Kenya .... **oldroydi** sp. n.

4 Prothoracic femur entirely dark red-brown 5

– Prothoracic femur entirely yellowish or yellowish with dorsal parts dark brown 6

5 Cell m_3 entirely lacking microtrichia except for a narrow strip along posterior margin; ♂ terminalia as in Figs 30–32; Kenya .... **quintillus** Oldroyd, 1940

– Cell m_3 with a narrow strip of microtrichia along posterior margin as well as a group arranged posterodistally; ♂ terminalia as in Figs 21–23; widely distributed in southern Africa, also recorded from Angola, Malawi, Zambia, Tanzania and Kenya .... **nobilis** Loew, 1858

6 Prothoracic femur yellowish with dorsal parts dark brown 7

– Prothoracic femur entirely yellowish 9

7 Fine setae of abdominal terga pale whitish; metathoracic femur extensively dark red-brown dorsally (proximal end narrowly yellowish); ♂ terminalia as in Figs 5–7; Yemen .... **caliginosus** Wulp, 1899

– Fine setae of abdominal terga shiny gold; metathoracic femur not extensively dark red-brown dorsally (proximal end always broadly, if not entirely, yellowish) 8

8 Cell m_3 almost entirely lacking microtrichia except for a narrow strip along posterior margin; ♂ terminalia as in Figs 37–39; Ethiopia, Kenya, Somalia and Tanzania ... . **zelimina** Speiser, 1910

– Cell m_3 fairly extensively microtrichose posterodistally (approx. half of cell covered); ♂ terminalia as in Figs 14–17; DR Congo .... **garambensis** Oldroyd, 1970

9 Face slightly wider than eye and extensively yellow; ♂ terminalia as in Figs 18–20, gonostylus with strongly hooked apex; from Kenya and Somalia .... **miniatus** Oldroyd, 1940

– Face slightly narrower than eye and extensively red-brown; ♂ gonostylus with weakly or hardly hooked apex 10

10 ♂ terminalia as in Figs 11–13, gonostylus with apex smoothly downward curved; Kenya, Somalia and Uganda .... **erythropus** Bezzi, 1915

– ♂ terminalia as in Figs 27–29, gonostylus with apex short, blunt, not downcurved; Somalia .... **pegos** sp. n.

DISCUSSION

Species of *Hoplistomerus* are confined to the afrotropics, are usually readily identifiable and are commonly encountered in collections. Although Oldroyd (1940) did much to make the fauna known, this study adds to our understanding of the taxonomy, distribution and biology of the species. Some species (*nobilis* and *serripes*) are widely distributed, and, in the case of *serripes*, clearly demonstrate clinal variation in some morphological characters. Most of the species, however, appear to have somewhat restricted distributions. These species, however, occur in relatively poorly sampled parts of northeast Africa and more information about them is still required.

Very few Asilidae are as specialised in their selection of prey as *Hoplistomerus* has proved to be (Londt 2006). While the best data relate to only one species (*nobilis*) there is some evidence that others may also concentrate their hunting activities on dung-visiting beetles. These flies are commonly encountered perching on top of accumulations of dung produced by grazing mammals and appear to be restricted to grassland biomes. Many members of the Laphriinae have been shown to utilise dead and decaying wood for the development of their larvae. As the dung of grazing and browsing mammals has much in common with decaying wood, efforts need to be directed toward the elucidation of the life cycles of these interesting asilids with a view to establishing if larvae develop within dung.

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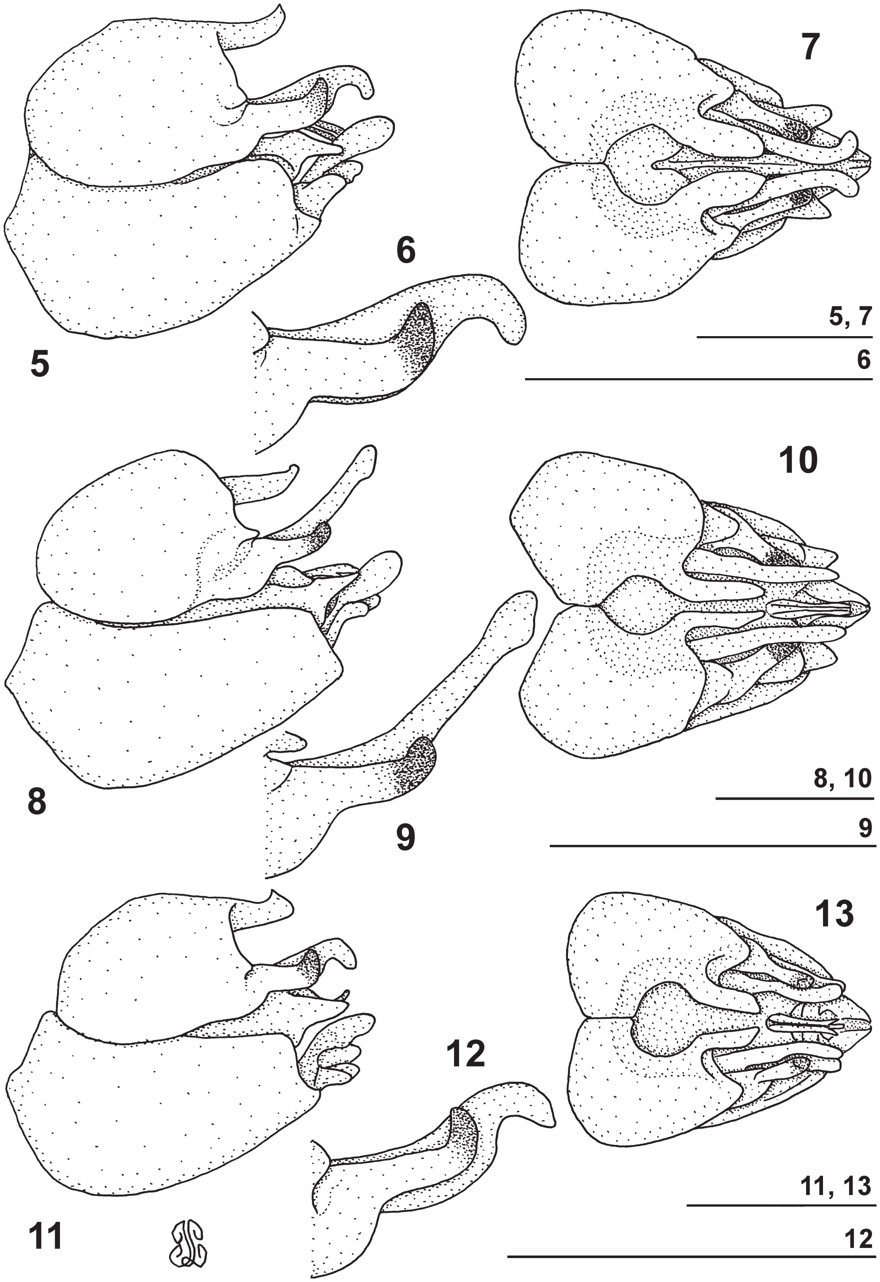
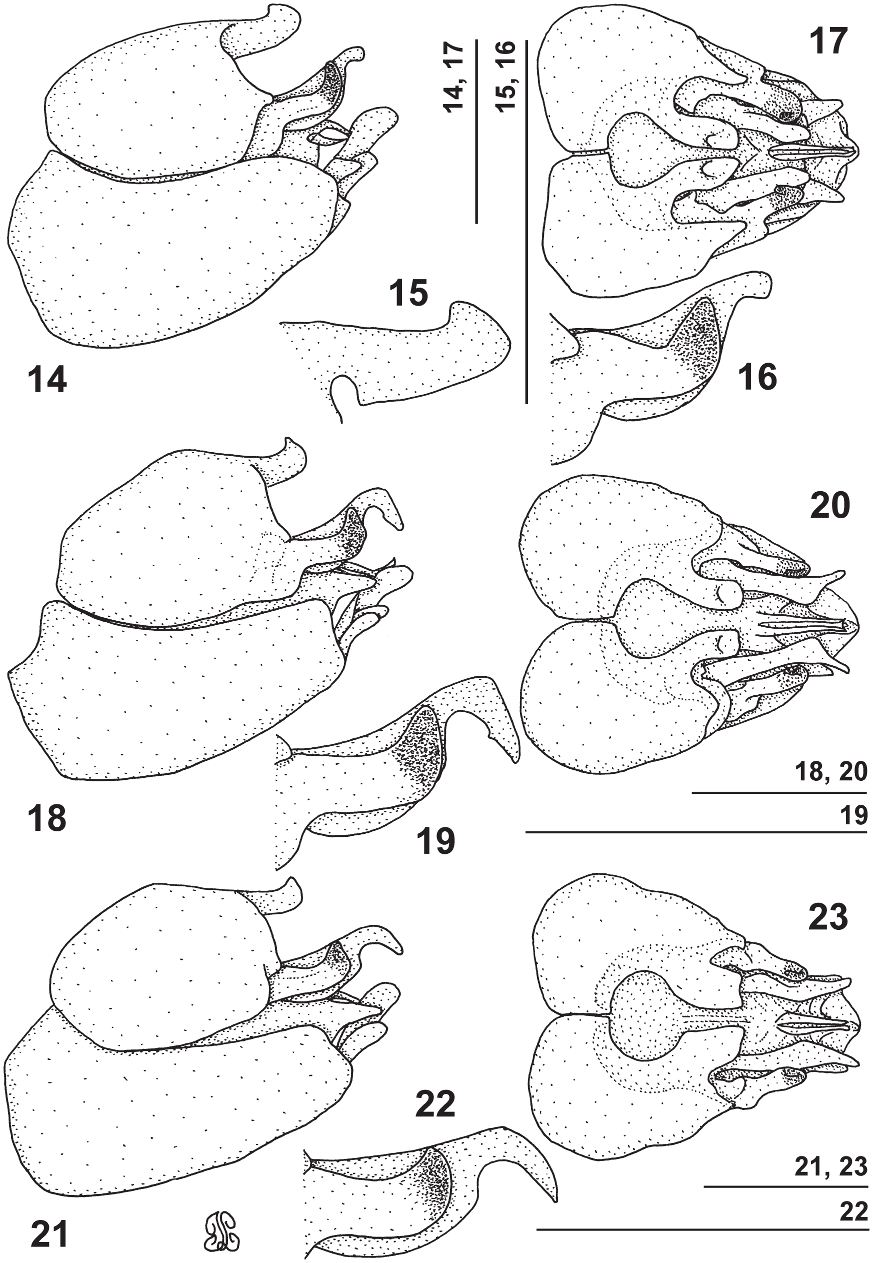
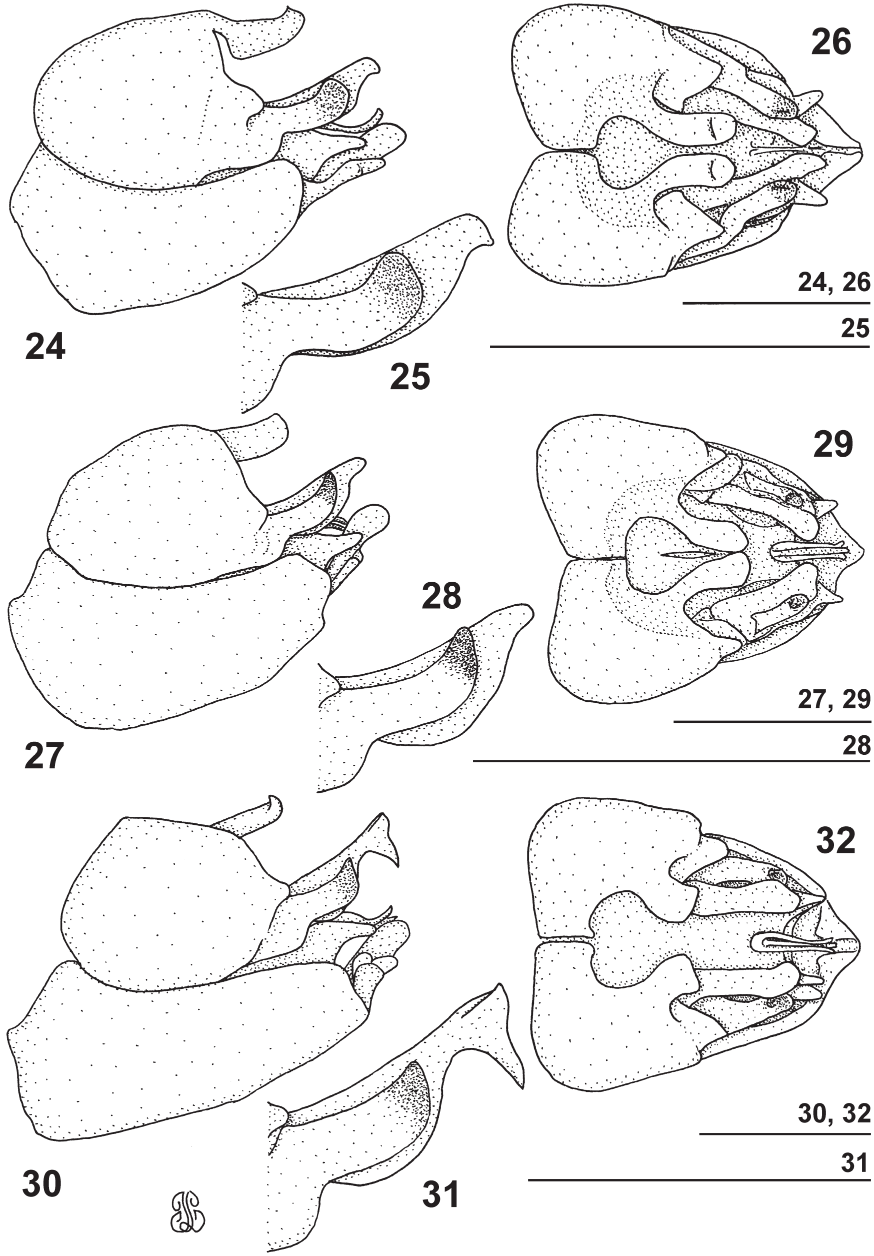


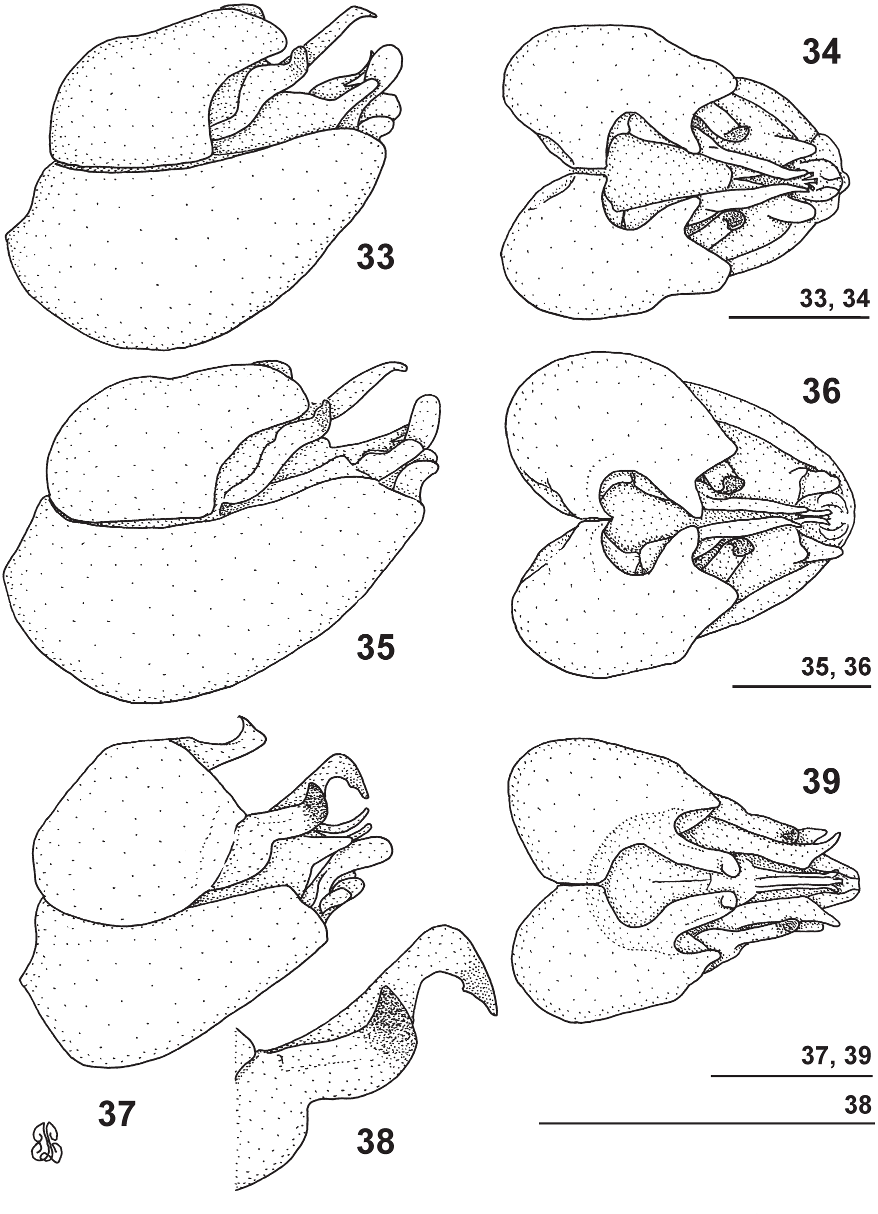
Figs 5–13. *Hoplistomerus* species, male terminalia: (5–7) *H. caliginosus* Wulp, 1899, Haithalhim paralectotype: (5) lateral, (6) distal end of gonocoxite and gonostylus, (7) ventral; (8–10) *H. engeli* Oldroyd, 1940, Bohotle paratype: (8) lateral, (9) distal end of gonocoxite and gonostylus, (10) ventral; (11–13) *H. erythropus* Bezzi, 1915, Baidoa ♂: (11) lateral, (12) distal end of gonocoxite and gonostylus, (13) ventral. Scale lines = 1 mm.



Figs 14–23. *Hoplistomerus* species, male terminalia: (14–17) *H. garambensis* Oldroyd, 1970, Garamba National Park holotype: (14) lateral, (15) oblique view of ventral process of gonocoxite, (16) distal end of gonocoxite and gonostylus, (17) ventral; (18–20) *H. miniatus* Oldroyd, 1940, Juba R. holotype: (18) lateral, (19) distal end of gonocoxite and gonostylus, (20) ventral; (21–23) *H. nobilis* Loew, 1858, Tette holotype: (21) lateral, (22) distal end of gonocoxite and gonostylus, (23) ventral. Scale lines = 1 mm.



Figs 24–32. *Hoplistomerus* species, male terminalia: (24–26) *H. oldroydi* sp. n., Kanyamkago holotype: (24) lateral, (25) distal end of gonocoxite and gonostylus, (26) ventral; (27–29) *H. pegos* sp. n., Bohotle paratype: (27) lateral, (28) distal end of gonocoxite and gonostylus, (29) ventral; (30–32) *H. quintillus* Oldroyd, 1940, Mara R. paratype: (30) lateral, (31) distal end of gonocoxite and gonostylus, (32) ventral. Scale lines = 1 mm.



Figs 33–39. *Hoplistomerus* species, male terminalia: (33–36) *H. serripes* (Fabricius, 1805): (33, 34) Keta ♂, lateral and ventral, (35, 36) Khartoum holotype of *auriventris* Loew, 1858, lateral and ventral; (37–39) *H. zelimina* Speiser, 1910, Nguruma ♂: (37) lateral, (38) distal end of gonocoxite and gonostylus, (39) ventral. Scale lines = 1 mm.

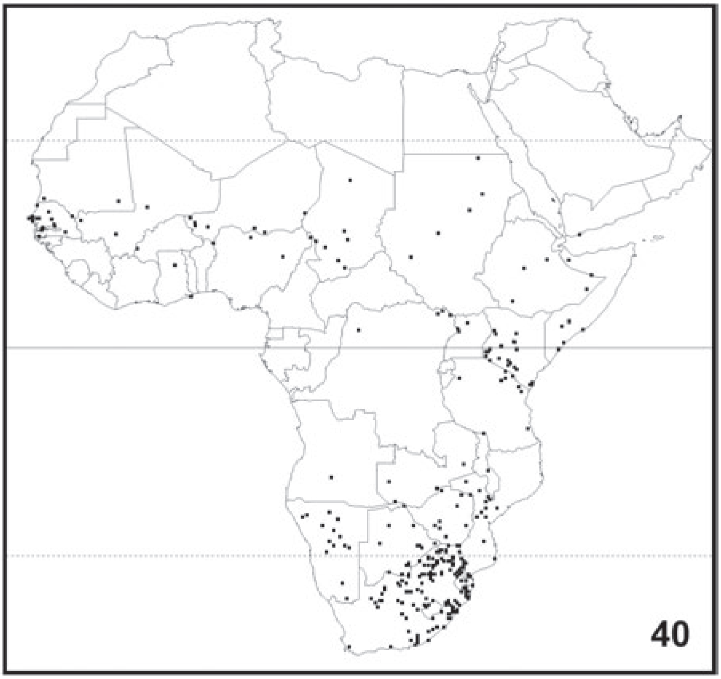


Fig. 40. Distribution of *Hoplistomerus*.

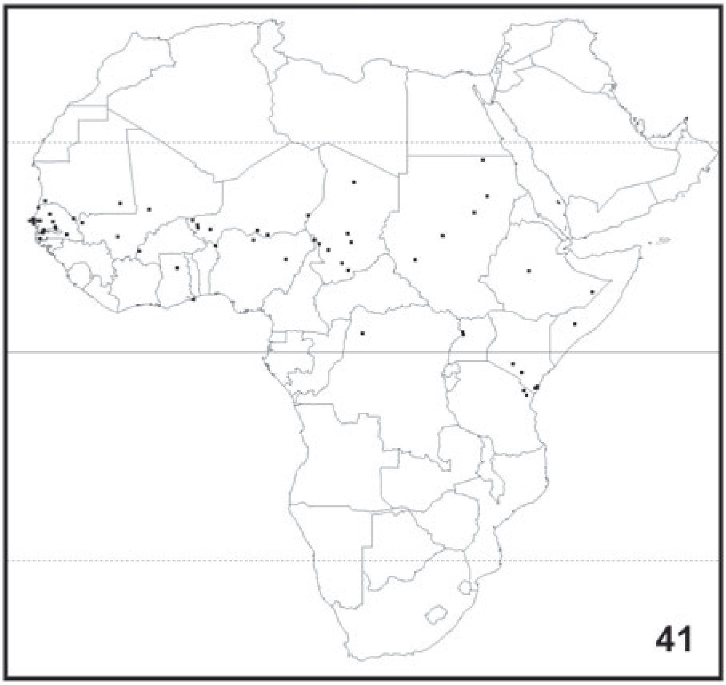


Fig. 41. Distribution of *Hoplistomerus serripes* (Fabricius, 1805).

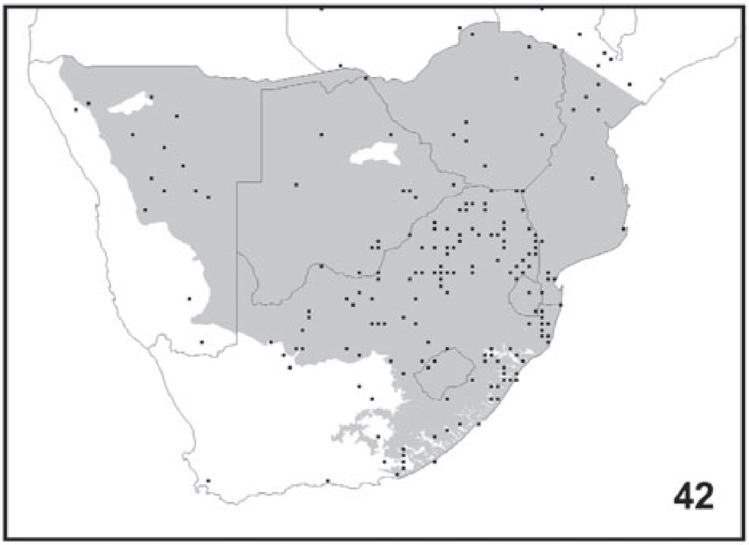


Fig. 42. Distribution of *Hoplistomerus nobilis* Loew, 1858 in southern Africa. The overlay is of the grassland and savannah biomes.

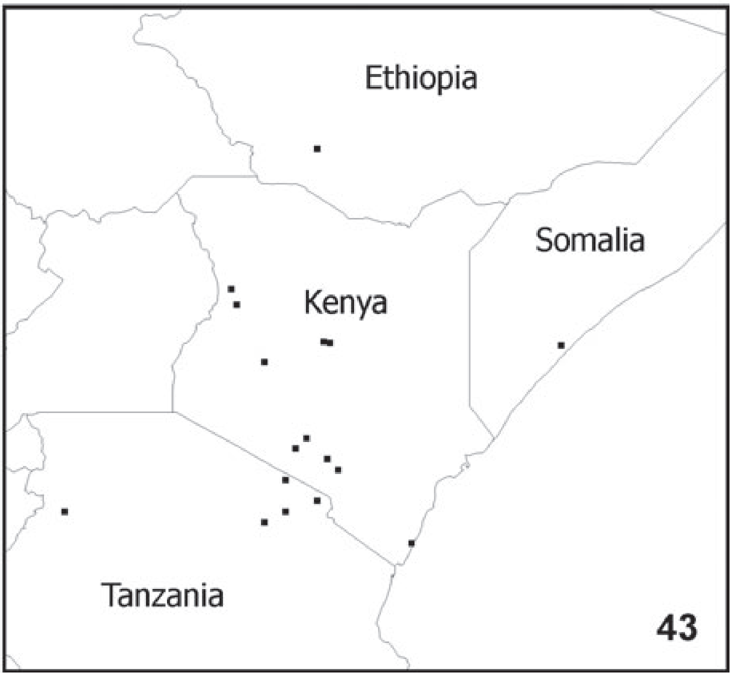


Fig. 43. Distribution of *Hoplistomerus zelimina* Speiser, 1910.